



0000096579

## BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE  
COMMISSION'S FIFTH BIENNIAL  
TRANSMISSION ASSESSMENT  
("BTA"), PURSUANT TO A.R.S.  
40-360.02G, OF THE ADEQUACY  
OF EXISTING AND PLANNED  
TRANSMISSION FACILITIES TO  
MEET ARIZONA'S ENERGY NEEDS  
IN A RELIABLE MANNER.

) DOCKET NO.  
) E-00000D-07-0376  
)  
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)  
) JOINT WORKSHOP ON  
) RENEWABLE TRANSMISSION  
) ISSUES PURSUANT TO  
) DECISION NO. 70635

At: Phoenix, Arizona

Date: April 20, 2009

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(Pages 1 through 265)

Arizona Corporation Commission

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ARIZONA REPORTING SERVICE, INC.

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1 BE IT REMEMBERED that the above-entitled and  
2 numbered matter came on regularly to be heard before the  
3 Arizona Corporation Commission, 1200 West Washington  
4 Street, Phoenix, Arizona, commencing at 9:35 a.m. on the  
5 20th day of April, 2009.

6

7 BEFORE: KRISTIN K. MAYES, Chairman  
8 PAUL NEWMAN, Commissioner  
9 SANDRA D. KENNEDY, Commissioner  
10 BOB STUMP, Commissioner

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MICHELE E. BALMER  
Certified Reporter  
Certificate No. 50489



1 MR. COLE: Could I have your attention, please.  
2 Let's go ahead and get started here. First of all, good  
3 morning. My name is Brian Cole with Arizona Public  
4 Service. I would like to thank everybody for coming here  
5 to the workshop on transmission to support renewable  
6 energy development.

7 I would like to, of course, thank this large  
8 group for being here, and I would especially like to thank  
9 Chairman Mayes for being here.

10 And Amanda Ormond is going to be moderating the  
11 workshop today. But before I turn it over to Amanda,  
12 Chairman Mayes would like to say a few words.

13 CHMN. MAYES: Thank you, Brian, I appreciate it.

14 Really impressed with the turnout today.  
15 Obviously, there's a lot of interest in renewable energy,  
16 and especially renewable energy transmission and how we go  
17 about getting renewable energy to our load pockets, and  
18 how we build an electron superhighway for renewable energy  
19 both in Arizona and the Southwest.

20 I know I have been watching the working group's  
21 progress. I've seen a lot of e-mails. I have attended  
22 the first workshop that Amanda conducted, Amanda's group  
23 conducted. And so I want to thank everybody who has  
24 participated in those initial sort of technical workshops  
25 to get us to this point.

1           We started this process actually several years  
2 ago. I guess it was 2006, if I'm not mistaken. So 2005/  
3 2006, and it started from a recommendation in a Staff  
4 Report that said, hey, you know, we've got all of this  
5 renewable energy, we have the renewable energy standard,  
6 but we don't really have a planning process for renewable  
7 energy transmission.

8           So I wrote an amendment that was passed by the  
9 Commission asking the utilities to, as part of their next  
10 BTA, Biennial Transmission Assessment, identify the  
11 renewable energy zones, and then identify the potential  
12 power lines that would be needed to get all of that  
13 renewable energy to market. And the group did that, and  
14 then it became clear that we had six zones and seven power  
15 lines, and that we needed to sort of start to narrow that  
16 down. And the utilities needed to decide and the  
17 Commission needed to decide, more clearly clarify those  
18 zones, where they really are, where we really think we can  
19 develop renewable energy. And then, which power lines are  
20 the highest priority and which lines ought to be built  
21 first. So that's where we are now, and that's what we're  
22 driving at.

23           I'm looking at the order and the amendment, and  
24 it says that we were to have a workshop by April 30.  
25 That's what we're doing today. And then by October 31,

1 the utilities, this working group, is to develop plans to  
2 identify future renewable energy transmission projects and  
3 propose funding mechanisms for the construction of those  
4 projects. Because as we all know, it's not free and it's  
5 not cheap necessarily, but it is necessary to build  
6 transmission.

7 So again, thank you very much. I know that -- I  
8 think most of the Commissioners or various Commissioners  
9 are planning to pop in and out today and we're looking  
10 forward to the discussion and the presentations.

11 MS. ORMOND: Thank you, Chairman Mayes. Amanda  
12 Ormond. Welcome everybody.

13 A couple of logistics. We do have a court  
14 reporter here today, so we'll be taking breaks on a  
15 schedule when she needs and when we need. Please, when  
16 you're speaking, we're going to pass around a mic. If you  
17 have a comment, please identify yourself both for the  
18 court reporter and anybody that's listening on the Listen  
19 Line. And then if you haven't already, please make sure  
20 to sign in.

21 So we do want to try to keep this as casual as we  
22 can. And let me walk through the agenda, and then I'm  
23 actually going to pass the microphone in the audience and  
24 ask you to identify yourselves. I think there's some  
25 benefit for everybody knowing who is in the room.

1           So we're going to first start off with Brian  
2 Cole, and he's going to talk about the BTA order itself:  
3 What is the requirement for the electric utilities. Then  
4 we're going to have two presentations on transmission  
5 planning to try to provide an overview of how do we  
6 conduct transmission planning, what is the process that we  
7 use.

8           I think that's going to take us to near 11:00  
9 where we hope to have a break, and then we're going to  
10 come back and have two presentations on the subcommittees  
11 that have been developed as a result of the BTA order.

12           Then we're going to talk a little bit about the  
13 regulatory constructs of transmission. We have some  
14 pretty thorny issues to discuss here today, and so we're  
15 trying to provide the morning to be background information  
16 for you all. So we're going to talk about regulatory up  
17 until lunch time, we're going to take a lunchtime break,  
18 and then we're going to come back.

19           Right after we come back from lunch, assuming  
20 that this timing works out, we are going to have the  
21 electric utilities present comments that they have that  
22 they want you to hear about process and where they are.

23           We also are going to have an open comment period  
24 for people, if you want to make statements about what  
25 should or shouldn't be done or some of the work products

1 that we've provided to date.

2 We're going to have a break in the afternoon, and  
3 then we're going to come back and ask you to have --  
4 facilitate a discussion on things like how do we move  
5 forward in financing transmission? What type of  
6 regulatory changes or policy changes are needed to be able  
7 to build renewable or transmission that will facilitate  
8 renewable energy? So if you can make it to the afternoon  
9 and you can hang in there, that's the opportunity to have  
10 some good dialogue on the path forward.

11 So with that, I would like to have people  
12 introduce themselves, and I think we can do it -- we have  
13 a packed room, but I think it will be worthwhile.

14 So I have Brian Cole to my left, and --

15 MR. ALBERT: I'm Brad Albert. I'm the director  
16 of resource planning at APS.

17 MR. KONDZIOŁKA: Good morning, Robert Kondziolka,  
18 Salt River Project, and I manage transmission planning and  
19 development.

20 MR. BERNOSKY: Good morning. Greg Bernosky with  
21 APS transmission and facilities siting.

22 MR. JOHNSON: Jeff Johnson with Arizona Public  
23 Service Company.

24 MR. TOBIN: Ric Tobin, Rich W. Tobin, II, LLC.

25 MR. GORSEGNER: Eric Gorsegner, associate

1 director of the Sonoran Institute.

2 MR. NARVERZ: Bill Narverz, NextEra Energy,  
3 formerly known as FPL group, transmission group.

4 MR. GIRALDO: Edwin Giraldo, NextEra Energy,  
5 formerly known as FPL Energy, business development.

6 MR. DRYE: Jim Drye from Renavitas Technologies.

7 MR. BAGLEY: I chair the SWAT Colorado River  
8 Transmission Subcommittee, the SATS Cochise County study  
9 group, and am project manager for the Harcuvar  
10 transmission project.

11 MR. HERRERA: Joe Herrera, Electrical District 3.  
12 I chair CATS HV.

13 MR. OJEDA: Rubin Ojeda of the Arizona State Land  
14 Department, right-of-way section manager.

15 MR. DIETRICH: Ed Dietrich, planning section of  
16 the State Land Department.

17 MR. ROBERTSON: Larry Robertson. I'm an attorney  
18 in private practice. I appear with some regularity before  
19 both the Commission and the Siting Committee.

20 MR. BALYEAT: Hal Balyeat, Arizona State Land  
21 Department, sales and commercial leasing section.

22 MR. MOORE: Ray Moore, Arizona State Land  
23 Department, also from the commercial leasing and sales  
24 department.

25 MR. ENOCH: I'm Nick Enoch. I'm with the law

1 firm of Lubin & Enoch, and I appear before the Commission  
2 regularly on behalf of the International Brotherhood of  
3 Electrical Workers.

4 MR. CROCKETT: Webb Crockett, an attorney with  
5 Fennemore Craig, appearing on behalf of Arizonans for  
6 Electric Choice & Competition.

7 MR. STONEBERGER: Don Stoneberger, Freeport-  
8 McMoRan Copper & Gold.

9 MR. BERRY: David Berry with Western Resource  
10 Advocates.

11 MR. COUTURE: David Couture with UniSource  
12 Energy.

13 MS. SCOTT: Deb Scott. I'm with the law  
14 department for Arizona Public Service.

15 MS. BRANDT: Jana Brandt with SRP.

16 MR. BECK: Ed Beck, director of line siting,  
17 Tucson Electric Power.

18 MR. DINKEL: Pat Dinkel with Arizona Public  
19 Service.

20 MR. BEGAY: Steve Begay, general manager, Diné  
21 Power Authority.

22 MS. DEPUKAT: Kathleen Depukat Bureau of Land  
23 Management, Phoenix district, project manager for  
24 renewable projects.

25 MR. MOULTON: Ron Moulton, operations manager,

1 Western Area Power Administration.

2 MR. OLSON: Mike Olson, Western Area Power  
3 Administration, transmission planning manager.

4 MR. CHARTERS: Jim Charters, Western States  
5 Energy Solutions, LLC.

6 MR. EVANS: Bruce Evans, planning engineering  
7 with Southwest Transmission Cooperative.

8 MR. BUCKINGHAM: Robert Buckingham, Renegy  
9 Holdings, owner of Snowflake White Mountain Power.

10 MR. BEETER: Brian Beeter, New Dawn Energy.

11 MS. KIPNES: I'm Jill Kipnes. I'm with Robert  
12 Lynch & Associates law firm.

13 MR. SERRATO: Kevin Serrato with SWCA  
14 Environmental Consultants.

15 MR. PATTERSON: Greg Patterson, Arizona  
16 Competitive Power Alliance.

17 MS. BARR: Kelly Barr. I manage regulatory  
18 affairs and contracts with Salt River Project.

19 MR. LALOUDAKIS: Dimitrious Laloudakis, energy  
20 management, City of Phoenix.

21 MR. DEARHOUSE: Paul Dearhouse, Intertribal  
22 Council of Arizona.

23 MR. BLACK: Patrick Black, an attorney with  
24 Fennemore Craig.

25 MR. SIMMONS: Joe Simmons with the University of



1 Arizona Research Institute for Solar Energy.

2 MR. BRONNER: Eric Bronner with Entegra Power  
3 Group.

4 MR. QUINN: Ian Quinn, attorney, Curtis, Goodwin  
5 & Sullivan.

6 MR. SPITZKOFF: Jason Spitzkoff with Arizona  
7 Public Service.

8 MR. STAHLHUT: John Stahlhut, APS transmission  
9 planning.

10 MR. SMITH: Paul Smith APS.

11 MR. DAY: Simon Day with Tessera Solar, formerly  
12 Stirling Energy Systems.

13 MS. SZOT: Lisa Szot, Tessera Solar.

14 MS. LeGERE: Amy LeGere, Foresight Wind Energy.

15 MS. CABBELL: Dana Cabbell, Southern California  
16 Edison, manager of transmission planning.

17 MR. BELVAL: Ron Belval, Tucson Electric Power,  
18 transmission planner.

19 MR. GALATI: Scott Galati with Galati & Blek,  
20 consultant to Solar Reserve.

21 MR. WISEMAN: David Wiseman, also with Galati &  
22 Blek, consultant to Solar Reserve.

23 MR. HSU: Jim Hsu, consultant for PDS. I work on  
24 several transmission projects for renewable energy,  
25 including Sandia wind power generation, also TransCanada

1 wind generation and solar project.

2 MR. ROMERO: Gary Romero, K.R. Saline &  
3 Associates.

4 MR. SMITHERS: Phil Smithers, APS.

5 MR. ROSE: Jack Rose, vice president of power  
6 engineers.

7 MR. LUCAS: John Lucas with APS, manager of  
8 planning and interconnection development.

9 MR. BAHL: Prem Bahl, Commission Staff.

10 MR. CARLSON: Tyler Carlson, Mohave Electric  
11 Cooperative.

12 MR. ETHERIDGE: Randy Etheridge, director of  
13 development, Acciona Energy.

14 MS. NALLY: Karen Nally, attorney in private  
15 practice.

16 MR. METZGER: Steve Metzger, Tucson Electric  
17 Power.

18 MR. DAVIS: I'm Alan Davis on behalf of  
19 TransCanada Chinook and Zephyr power transmission line  
20 projects.

21 MR. ANDRAE: Paul Andrae, Foresight Wind Energy.

22 MR. RASMUSSEN: Paul Rasmussen, Department of  
23 Environmental Quality, Line Siting Committee member.

24 MR. KORINEK: Dave Korinek with KEMA Consulting.

25 MS. BAUMER: Brooke Baumer. I'm an intern for

1 the Natural Resource Infrastructure and Public Debt  
2 committee at the state senate.

3 MR. BAAK: I'm Jim Baak, director of policy for  
4 utility scale solar, the Vote Solar initiative.

5 MR. MARTIN: Tom Martin, Electrical District  
6 No. 2.

7 MS. MOGEL: Angela Mogel, Bureau of Land  
8 Management. I'm with the program lead.

9 MS. AGUAYO: Stacy Aguayo, APS.

10 MS. SANDLER: Vicki Sandler, Arizona Independent  
11 Scheduling Administrators Association.

12 MR. KRZYKOS: Peter Krzykos, APS transmission  
13 planning, and also current chairman of renewable  
14 transmission task force.

15 MR. SMITH: Bob Smith, Arizona Public Service.

16 MR. KRUEGER: Larry Krueger, transmission and  
17 facilities siting department.

18 MR. DOMSKY: Ira Domskey, Arizona Department of  
19 Environmental Quality.

20 MR. BANTA: Ravi Banta, RES Americas.

21 MR. STOCKING: Paul Stocking, Sequoia Energy.

22 MR. MCGUIRK: I'm Joe McGuirk with Sun Miner.

23 MR. BAGGETT: Chris Baggett with Arizona Electric  
24 Power Cooperative.

25 MR. MELLENTINE: Stephen Mellentine, Salt River

1 Project.

2 MR. BATTISTESSA: Alex Battistessa, regional  
3 account manager with Ventyx.

4 MR. SHEEHAN: Mike Sheehan, Tucson Electric  
5 Power, resource planning.

6 MR. ARREOLA: Eddie Arreola, BLM project manager.

7 MR. ATKINS: Steve Atkins, Northern Arizona  
8 University.

9 MR. HORYZA: Chris Horyza, planning and  
10 environmental coordinator with the BLM.

11 MS. DECKER: Julie Decker, Bureau of Land  
12 Management.

13 MR. JENKINS: Robert Jenkins, director of  
14 transmission interconnection, First Solar.

15 MR. AMIRALI: Ali Amirali with LS Power.

16 MR. WILLIAMSON: Ray Williamson with the Staff of  
17 the Corporation Commission.

18 MR. CORDES: John Cordes, LS Power.

19 MS. TACKETT-HICKS: Kathy Tackett-Hicks,  
20 KTH Consulting.

21 MR. SMITH: Jerry Smith, K.R. Saline &  
22 Associates.

23 MS. ORMOND: Folks, thank you. I appreciate you  
24 introducing yourselves. I think we can see we have a  
25 really wide interest in this topic today.

1           We're going to start off our presentation with  
2 Brian Cole, and he's going to talk to us a little bit  
3 about the ACC BTA, Biennial Transmission Assessment order.

4           CHMN. MAYES: Amanda and Brian, before we get  
5 started, just for the record and for everyone in the  
6 audience, these documents will be available in the docket  
7 by maybe end of the day or --

8           MS. ORMOND: At some point, yes.

9           CHMN. MAYES: By what time? By end of the day?

10          MR. COLE: End of the day today.

11          CHMN. MAYES: Okay, great. Just so everybody  
12 knows. And then, does anybody have the Docket Number? We  
13 can provide that at some point today. Is it up here?  
14 There we go.

15          MR. COLE: We actually have it on the  
16 presentation.

17          CHMN. MAYES: For those folks in the audience  
18 that want to see those. Okay.

19               And then also, I asked Amanda for this as well,  
20 for the Commissioners, when they come in, as they come in,  
21 having these documents available would be great, too.

22          MS. ORMOND: We'll see if we can get copies made  
23 today and hand out.

24          CHMN. MAYES: Perfect. Thank you.

25          MR. COLE: Thank you, Amanda. Thank you,

1 Chairman Mayes. The first presentation that I'll be doing  
2 today is an overview of the ACC BTA order and planned  
3 utility response process. I am a manager in the resource  
4 planning organization at Arizona Public Service. My name  
5 is, again, Brian Cole.

6 So I'll make the first part of this relatively  
7 brief. Chairman Mayes has already talked about the fact  
8 that there are three parts to the BTA order. The first  
9 one is to by April 30 conduct a workshop or series of  
10 planning meetings to identify and approve for construction  
11 and finance the ways in which new transmission projects  
12 can be identified.

13 The key, I think, here is to make sure that this  
14 is done in a manner that will support the growth of  
15 renewables in Arizona. The second and third parts, and  
16 sort of the end game of where we're trying to get to here,  
17 are that each of the Commission-regulated utilities shall,  
18 either alone or in cooperation with the other utilities by  
19 the end of October, use the results of all of these  
20 processes that are already in place and identify what  
21 those top three transmission projects are, develop plans  
22 to identify future renewable transmission projects, and  
23 then also establish what those plans and proposed funding  
24 mechanisms, as Chairman Mayes stated, are to enable us to  
25 construct the top three transmission projects for each

1 utility.

2           So in order to do that and to describe how the  
3 utilities plan on going about their evaluation process,  
4 I'm going to step through this sort of from the end first.  
5 And in doing that, the end, of course, is to get to a top  
6 three, along with plans and funding mechanisms by the end  
7 of October for the utilities.

8           The important note there is that that end game of  
9 filing the top three, there could be joint ownership  
10 projects there. So the utilities will be coordinating  
11 together to make sure that they've covered projects that  
12 will benefit more than one party.

13           In order to get to the top three, the individual  
14 utilities are going to do an evaluation process that is  
15 composed of a couple of different parts that will look at  
16 all of the renewable resource areas and options and the  
17 transmission associated with it, and then work with the  
18 other utilities on joint projects for coordination of  
19 those efforts in order to get to those top three by  
20 October.

21           The other thing that will be involved are the  
22 policy issues, and that's really what the main focus of  
23 today's workshop is. And those are the funding  
24 mechanisms, cost recovery, siting constraints, and export  
25 markets. So those will be discussed in detail this

1 afternoon, and Amanda will be working on getting us all  
2 working on that.

3 So it's these two things together, the economic  
4 evaluation and the policy issues, that will feed into the  
5 utilities' final on the top three that they plan, along  
6 with the funding mechanisms to go with that.

7 Another note I would like to make is that  
8 although the order is the responsibility of the utilities  
9 to do that, we do plan on trying to have at least a couple  
10 of different opportunities for stakeholder input as we go  
11 through this process of our evaluation. So we'll try to  
12 establish what sort of assumptions we'll have and what  
13 progress we've made and try to find opportunities for  
14 opening stakeholder input on that. We don't know exactly  
15 what that is going to look like, but please stay tuned  
16 because that is the plan.

17 So in order to get the economic evaluation done,  
18 I have put up a group of example inputs to that economic  
19 evaluation, things like resource cost; water availability;  
20 how much resource capacity is there available in certain  
21 areas for transmission to get to; what are the capacity  
22 and energy benefits of that type of resource? Of course,  
23 the transmission cost is very important, and then what is  
24 the timing of those plans?

25 I will point out that each of the utilities has



1 unique circumstances and each of the evaluations will be  
2 done slightly different for each utility.

3           So at this point I'm going to break off of the  
4 flow chart and talk a little bit about some generics of  
5 the economic analysis from the utility's perspective.

6           So the first piece is we're going to look at the  
7 overall value and assess that comparatively among all of  
8 the transmission options to determine what the highest  
9 priority transmission projects should be. As I said, each  
10 of the resource and transmission combinations will be  
11 looked at during that economic analysis, with the end goal  
12 being to develop the transmission lines and resources that  
13 we expect will bring the best value proposition for our  
14 customers.

15           Some of the things that will feed into that  
16 include financing, things like weighted average cost of  
17 capital, depreciation, taxes, et cetera.

18           Of course, the capital cost of the transmission  
19 options, the capital cost of the expected resources with  
20 those transmission options, and then the timing of the  
21 resource in-service dates. And that will come into play  
22 when you're talking about what utilization of those assets  
23 would be.

24           It will also take into account the expected  
25 delivery of the energy for the resource. From a quantity

1 perspective, how many megawatts would there be? How much  
2 energy? How many megawatt hours?

3 And then the timing of that, when is it  
4 delivered? Is it delivered on-peak when the customers  
5 need it most? Is it delivered off-peak? And what times  
6 of year is it most prevalent, things like that.

7 The importance there is to talk about the value  
8 of the customers, and each utility has a slightly  
9 different way to come up with that value, but the capacity  
10 value and the energy value of those resources are  
11 extremely important in coming to a determination of what  
12 the most valuable transmission asset will be for each of  
13 the utilities.

14 So having said that, I'm going to give a specific  
15 example for APS. And again, this is an APS example. Each  
16 utility will have a slightly different way to look at  
17 things. But in general, this is a concentrated solar  
18 power progression curve, and what I want to point out is  
19 the load curve, which is in very light green with a scale  
20 on the left, is a projected load curve for 2015, load  
21 profile. And you'll note that APS peak is between 4:00  
22 and 5:00.

23 And then in red with the scale on the right,  
24 based on a 100-megawatt project, is the CSP production  
25 profile. And what I would like to note there is that that

1 profile is very coincident with when our load goes up  
2 during the day in the summer. So as our customers need  
3 more energy, that's when the CSP project is producing the  
4 most. And you'll also note that it's near 100 percent of  
5 its capacity during those peak hours.

6 This information, by the way, is taken right out  
7 of APS's resource planning filing and is located at  
8 APS.com/resources, so if you want to take a look at that.

9 In contrast to how CSP does fit very well with  
10 our load profile during the day, we look at a wind  
11 production APS load profile curve. Again, same idea on  
12 the scale, the system load being on the left and the right  
13 scale being the wind output. And what I would like to  
14 note here is that you'll see most of the energy from the  
15 wind output on this peak day -- and this is actual data --  
16 was during the late evening and early morning hours when  
17 our load is not as high. So there's not as much  
18 coincidence there. Now, I will point out every wind  
19 project is different, and some of them match profiles much  
20 better than others.

21 So those are the types of differences that we'll  
22 be looking at when we do this analysis to determine which  
23 is the best transmission for our customers for each of the  
24 utilities.

25 Taking those two things and putting them

1 together, this is a -- I sort of stole it from the  
2 resource plan filing, but it's not exactly in there this  
3 way, just to simplify. And it shows how the value of each  
4 of these types of resources looks to the utility, and in  
5 this case APS -- again, I'll point out that each utility  
6 will have a slightly different take -- and that the  
7 original cost for the solar thermal and the wind sort of  
8 get flip-flopped when you look at the actual value to the  
9 APS customers. So that's what I wanted to point out  
10 there.

11 I will lastly note that this is a sort of generic  
12 for Arizona utilities in that during this peak of summer  
13 in the afternoons is when we need that energy the most.

14 So now, to finish up, I'll jump back to the  
15 utility evaluation process and the flow chart and talk  
16 about what goes into all of these policy issues and the  
17 economic evaluation that will be going on.

18 CHMN. MAYES: Brian, could I ask a quick  
19 question?

20 MR. COLE: Sure.

21 CHMN. MAYES: You talked about the look that you  
22 did of the wind integration costs. Are you making that  
23 analysis in isolation, or are you looking at the potential  
24 for wind coupled with solar thermal? I mean, for  
25 instance, you know, one could envision -- we have

1 identified a solar zone in Mohave County, or in that area.

2 We have got wind up there, too.

3 Do you look at the potential for combining CSP  
4 with a wind project to, you know, potentially create a  
5 cost effective or economic transmission plan?

6 MR. ALBERT: Is this on? Yeah. Brad Albert from  
7 APS just to identify myself.

8 We'll certainly be looking at those type of  
9 combinations when we start working through the analysis  
10 that Brian mentioned in terms of what resources are  
11 available in the resource zones and what the transmission  
12 solutions are for that particular area. So those  
13 combinations will be looked at through our process.

14 CHMN. MAYES: That would also include any  
15 existing ATC, available transmission capacity in that  
16 area?

17 MR. ALBERT: Correct. Absolutely.

18 CHMN. MAYES: Okay. Thanks.

19 MR. COLE: Thank you. So the first input which  
20 occurred, and I think Chairman Mayes pointed this out  
21 earlier, this started in a 2006 BTA order, and that  
22 established the RTTF group that Peter K. -- rather than  
23 saying Krzykos and asking to spell it -- heads up. And  
24 that group put together a lot of foundation for what is  
25 going to be done during this go-around, which is more of a

1 refinement. So I wanted to point that out.

2           The next piece is the renewable transmission task  
3 force ARRTIS group. And I always have to look this up  
4 because it's hard to remember. Arizona Renewable Resource  
5 and Transmission Identification Subcommittee. That's a  
6 long one. But that group was formed specifically to do a  
7 refinement of what the renewable energy areas look like  
8 within the state of Arizona so that the RTTF group can  
9 identify the transmission specifically for those refined  
10 areas. And I'm not going to get into detail on how all of  
11 these fit into the regional planning process, but Rob  
12 Kondziolka will be talking about that here shortly. So  
13 that will feed in. They'll look at siting constraints and  
14 some of the areas.

15           And then, additionally, the RTTF finance group,  
16 which is headed up by Tom Wray, is looking at a lot of  
17 policy issues that we'll be talking about here today,  
18 things like funding mechanisms, cost recovery, and export  
19 markets. So that information also will feed into both the  
20 economic and the policy part of this evaluation process.

21           And then, lastly but not least, is the input from  
22 workshops such as this. We will be taking this  
23 information also and feeding it into the overall process  
24 of how do we come up with those top three? What are the  
25 right plans? What is the timing associated with it, and

1 what are the funding mechanisms going to be to get there?  
2 Of course, all of that is driven by the 2008 BTA order  
3 that was put out there by the Commission.

4 So that's a description of planned utility  
5 evaluation process in order to meet that BTA order. At  
6 this time I would like to open it up for any questions.

7 MS. ORMOND: Anybody have any questions?

8 (No response.)

9 MS. ORMOND: There's a question out there  
10 somewhere? No.

11 MR. ROBERTSON: Amanda, yes. This is Larry  
12 Robertson. The question is, on your coordination of  
13 utilities that you alluded to with the idea of trying to  
14 jointly identify projects, have you set up a formal  
15 mechanism or group for doing that particular function, and  
16 have you set up a schedule for how frequently you meet?

17 MR. COLE: Thanks for the question. And what we  
18 have done so far is we've been working through the ARRTIS  
19 group and finance group, which are open to everybody to  
20 participate in, and trying to take input from utilities,  
21 developers, and other stakeholders through those processes  
22 in order to feed that information up.

23 Now, as far as how do we get others involved in  
24 any evaluation process as we go, as I mentioned, we are  
25 going to try to have opportunities within this process in

1 order to get additional stakeholders' input and feed them  
2 back assumptions that we're planning on using so that we  
3 can make this as interactive as we can in order to come up  
4 with the best solutions. So there is plans to do that.  
5 We don't know specifically what they're going to be.

6 We will continue to be part of the finance and  
7 ARRTIS work groups, and input will be taken there also.

8 COM. NEWMAN: Madam Chairman, I have a question.  
9 First of all, I'm Paul Newman. I'm one of the  
10 Commissioners. So sorry I'm a little late. I'm actually  
11 going to have to go over to a press conference around 10  
12 minutes, but I'll be back and I'll be here all day.

13 One of the press conferences is an announcement  
14 of a new Spanish company that is exploring opportunities  
15 in Mohave County, and it's going to be a Commerce  
16 Department press conference. And so somebody from the  
17 Commission, and I have been elected to be the person  
18 representing the Commission at this press conference.

19 But it alludes to my question, which is basically  
20 I've been a Commissioner now for just over 100 days. One  
21 of my goals is to try to increase renewables in Arizona,  
22 as everyone knows. I understand it's very, very complex  
23 when you add in the transmission variables, management  
24 variables, but I think in the 100 days that I've been  
25 here, I think I have interacted with approximately 100



1 companies, literally, not to mention everyone else that I  
2 have been talking to. Probably 4- to 500 meetings that I  
3 have had in 100 days, besides my other jobs, and I think  
4 something like 100 companies have talked to me on one  
5 level or another. Of course, I'm going to be the judge in  
6 these cases, but I also have on an economic development  
7 hat, if you would, to try to figure out how to do this  
8 quickly.

9 I guess my question, and most efficiently, all of  
10 those people can't possibly be in the room today. Some of  
11 them are from all over the world; some of them are here.  
12 But it seems to me that every time I talk to them, I  
13 always ask them, well, who is your market? What is the  
14 cost? All of those general questions that are a little  
15 bit murky on some of them because they're propriety, as  
16 you can imagine.

17 But who is coordinating with these potentially  
18 hundreds of customers? You know, should it be the  
19 Commission? Who should it be? I want to have a reserved  
20 leadership in the sense that ultimately all of the  
21 Commissioners will be a judge, but there are people out  
22 there that really want to be linked in with us.

23 What is your report as to how many of them are  
24 linked in? I know that some of them are personally  
25 talking to APS. When I mentioned UniSource Energy as

1 being perhaps the biggest company with the most challenge  
2 that we have because of their coal load and what is going  
3 on in Congress right now in terms of cap and trade, you  
4 know, they're going to be challenged.

5 Who is coordinating, or is this just sort of the  
6 economics of the strongest? And does, in a sense, APS get  
7 to make those calls because they're the biggest company  
8 and everyone is negotiating with them? Who is leading  
9 this process?

10 That's a long question, but you understand the  
11 dynamics are very important.

12 MR. ALBERT: Yeah. Commissioner Newman, Brad  
13 Albert from APS. I don't know if I met with 100 different  
14 renewable energy developers, but I have met with a lot. I  
15 haven't -- more than I can keep count of, I would say.

16 From the APS perspective, we have a very active  
17 procurement process for engaging with the renewable  
18 developers. And I'll tell you, it's a source of a lot of  
19 learning for us in terms of what is going on out there,  
20 what people's creative ideas are. But we try to funnel  
21 everyone through our procurement processes and engage with  
22 them and learn from them along the way. So that's one of  
23 the most active ways that we engage with them at APS.

24 Of course, the other way, I call it a more formal  
25 way of the transmission planning process. And when a

1 developer comes in and requests an interconnection that  
2 they want to use our -- connect to our transmission  
3 system, that's another way that we engage with them.

4 But I also echo your comment that there's a lot  
5 of it going on, and it's almost hard to keep track of  
6 everything that's going on in the state right now.

7 MS. ORMOND: Commissioner Newman, if we focus  
8 just on transmission planning, I think that the two  
9 subcommittees that are going on have been a place where  
10 the developers can get involved. And when I do the ARRTIS  
11 presentation later, I actually list a lot of renewable  
12 energy companies that have been involved in our process.  
13 There certainly aren't 100, but when you have things  
14 webcast, it doesn't always show who is on the phone  
15 anyway. So these processes have been set up to be really  
16 broad stakeholder processes to allow people to come in.

17 The renewable energy transmission task force that  
18 was held before that was a group of developers and  
19 transmission planners and interested parties. So I think  
20 that we do -- if you're a generator, a developer, you know  
21 this is going on in the state of Arizona. You know when  
22 our meetings are. So I think we're providing the  
23 opportunity to hear from those developers, and we'll  
24 continue to in the ARRTIS and the finance subcommittees.

25 CHMN. MAYES: If I could just add to that,

1 Commissioner. One of the -- and I hear your frustration,  
2 and it's a frustration that -- if it is a frustration --  
3 that I felt two years ago.

4 Because it appeared to me as though -- well,  
5 we've got a huge chicken-and-egg problem on our hands.  
6 And it looked to me like if the Commission didn't take  
7 leadership and hold these workshops, and essentially order  
8 the utilities, which is what we did in the last two  
9 Biennial Transmission Assessments, to identify the  
10 renewable energy zones and then identify renewable energy  
11 transmission projects, they weren't going to get built.  
12 You know, it was sort of -- or they would get built on the  
13 utilities' timelines, maybe.

14 And one of the reasons that I thought it was so  
15 important that we have this Arizona-specific process, but  
16 also one that involves neighboring states, is that it  
17 seemed to me that the utilities were going to continue --  
18 some of the utilities were going to continue to make very  
19 large out-of-state renewable energy purchases, and we  
20 weren't going to be able to develop renewable energy in  
21 our state, frankly in our region, if we didn't have this  
22 process.

23 You know, we saw maps two years ago showing zero  
24 ATC, zero available transmission capacity on some of APS's  
25 and TEP's existing power lines. And it was going to be

1 impossible for the Navajos to bring power down into  
2 Phoenix, and it was going to be impossible for, you know,  
3 the folks up on the rim to do projects in Navajo and  
4 Apache County, because literally there was zero ATC on  
5 that power line that came down through that area.

6           The project that you're going to go do the press  
7 conference on, I wonder what the ATC is on that line  
8 coming down from Mohave County. And is that a project --  
9 you know, in order for Arizona to take advantage of that  
10 energy, will we need a new transmission line to get that  
11 down here, or is it going to by virtue -- by default it's  
12 going to go to Las Vegas or California?

13           COM. NEWMAN: And that is one of the reasons for  
14 my questions. I mean, even in this morning's paper,  
15 Mr. Adaza notes that STG is a potential customer.

16           Most of the -- and 100 might be too much, but I  
17 tell you, it's between 50 and 100, and closer to 100. And  
18 it happens -- the calls are coming in every day. And if  
19 we should increase the renewable energy standard, I  
20 actually think it will make us a more fertile ground for  
21 more people to want to be involved. So this transmission  
22 piece is absolutely essential, and I applaud the former  
23 Commission for starting this process.

24           But it's still the utilities, in a sense, that  
25 have to sign off on the contracts as customers, and so

1 they are integral players in the sense of if they say no,  
2 they're a bit worried about still the expense of solar  
3 concentrators being at a certain level at this point in  
4 time. They might wait five to ten years for a new  
5 technology to come down, or whatever it might be, and we  
6 might fall askew of some of these goals that we have for  
7 all of the companies.

8           And certainly APS is probably best capitalized,  
9 you know, to take advantage of this with the most  
10 customers, but like I said, UniSource Energy is also  
11 looking at a predicament where they're going to have to  
12 expedite their process in some way, not to mention the  
13 rural co-ops and some of the other players that are really  
14 behind the curve in the sense of having fewer amount of  
15 customers and them looking at higher prices for consumers,  
16 which puts the consumer -- the Commission on the  
17 defensive, in a sense.

18           So I'm glad that these processes are in place,  
19 and I guess what I -- before I have to go over to this  
20 press conference, I wanted to lead it off with that idea  
21 of if your subgroups are working well, that's good and  
22 hearing that report. But I want to make sure that  
23 everyone knows that you might be -- this group might be  
24 the best way for them to plug in to where they should be  
25 putting the projects.

1           Most everyone I have talked to is very aware of  
2   needing to be near an existing transmission line if  
3   they're going to do their project immediately. But then  
4   it becomes this planning process over the next five to ten  
5   years of where we put other transmission lines, which is  
6   what we're just starting today. And we could also be  
7   taking advantage of the very big amount of money that will  
8   be coming from Washington to try to figure out how -- you  
9   know, where we're going to put this.

10           So I applaud everyone here today. I applaud the  
11   process that was put in place. But it feels to me a bit  
12   chaotic because it is the market, and, you know, the final  
13   negotiation decision is out of the hands of this  
14   Commission and it's in the hands of the executives who,  
15   you know, some want to go forward, some feel very fine  
16   about the mix that they have, but they have some pressures  
17   now because of our renewable energy standard.

18           And I just think it's going to get more chaotic  
19   if we should increase the standard, which I would like to  
20   be able to do, because I don't want us falling behind  
21   other states. I don't want all of this new technology  
22   going to other states. I would like to see Arizona as a  
23   leader in this. I would like to -- I cannot for the life  
24   of me see a future where we would not be a net exporter of  
25   renewables when it comes to solar.

1           So everyone in this room, I think, has a vested  
2 interest in that, the state of Arizona does, and so that  
3 is the reason for my general -- it's not -- my general  
4 urging of everyone in this room to try to put their heads  
5 together and maybe look at the risk a little bit  
6 differently.

7           So that is my sentiments this morning, but I'm so  
8 glad to see so many participants here. And again, I'll be  
9 here, and I'll be here as long as I can today, but I'll  
10 probably be gone now for an hour so I can invite another  
11 Spanish company to Arizona that would like to invest. And  
12 it's actually a Spanish company that I have been -- I was  
13 actually even talking to before I was elected. They very  
14 much would like to come to Arizona and to the Kingman  
15 area.

16           And the other thing that I wanted to talk about a  
17 little bit was a rural perspective as opposed to sort of  
18 a -- well, I think the Chairwoman touched on this. There  
19 are also lots of people out there, individuals who would  
20 like to take advantage of distributed generation,  
21 individuals -- I talked to a group of public providers the  
22 other day that would like to see ranchers involved in wind  
23 projects and wind zones that have been designated. I  
24 think we need to do more work with that. I think we need  
25 to do more work with all of the big boxes and the schools



1 and the government. This is a monumental task.

2 And so as we go through this as well, Kris, and  
3 hopefully with the whole Commission, I think we need to  
4 also develop a policy. You know, what does it mean that  
5 our distributed generation rules are in place now? And  
6 how much more power is going to be coming to the grid once  
7 we do the photovoltaics on roofs, the photovoltaics that a  
8 lot of our citizens would like to take advantage of with  
9 the incentives.

10 So it becomes a very, very complex equation, and  
11 difficult for the power providers to make these decisions  
12 and take these risks. But only through processes like  
13 this can we figure it out.

14 And I'll close with this. Mr. Post, the former  
15 Chairman of APS, gave me a lot of reason to be optimistic  
16 about this process. He vowed that APS would be very much  
17 a player in this, and I see that you are, and that is a  
18 good thing. But I just urge all of the providers that we  
19 regulate to try to get to the table on this, because this  
20 is our future and we need to make some tough choices.

21 MS. ORMOND: Thank you, Commissioner.

22 So we are going to transition to talk about the  
23 transmission planning process. We're going to have two  
24 presentations. One is by Brad Albert with APS, and then  
25 we're going to have Rob Kondziolka from Salt River Project

1 talk about the whole transmission planning process.

2 So we have Brad.

3 MR. ALBERT: Thank you, Amanda. Brad Albert from  
4 APS. And I'll tell you, I'm just very impressed by not  
5 just the size of the audience here, but the diversity of  
6 the people representative of the stakeholders involved  
7 here. And we have certainly seen that through the RTTF  
8 process and everything, and it's very encouraging to have  
9 so many people interested and participating in this.

10 CHMN. MAYES: Brad, can I just -- I want to act  
11 on that, because I want to thank in particular, you know,  
12 NTUA for being here. Mr. Begay, thank you for coming  
13 down. Also BLM, and I know they've been involved in the  
14 ARRTIS process. State Land, Game & Fish, and the cities  
15 that are here. I mean, it really is a fantastic turnout.  
16 And I think if we can continue this sort of collaborative  
17 process, I think that would be very important for actually  
18 building these lines so that we can all be on the same  
19 page and that we can sort of develop sort of a cooperative  
20 effort going forward and understand what each other's  
21 issues are and try to accommodate each other to the extent  
22 possible on these proposed lines some. I agree.

23 MR. ALBERT: Okay. So my presentation is a  
24 little bit complimentary to Rob's presentation, which is  
25 the next one. I'm going to sort of focus on the resource

1 planning side of this equation in terms of how do we go  
2 about determining the amount of renewable resources from  
3 the perspective of a vertically-integrated utility like  
4 APS, and then the associated transmission that's needed to  
5 support them.

6 I'm also going to give a little perspective on  
7 sort of looking at the other side of the equation, the  
8 export market and the challenges that that can represent  
9 in determining transmission needs.

10 A couple of opening, preface-type comments. I'm  
11 going to be using numbers and examples in here that are  
12 really from the APS perspective. They are really  
13 representative of what the other utilities would face  
14 also, but the numbers in here are all APS's. And then  
15 also, I just wanted to note that the transmission that I'm  
16 going to be talking about in my presentation is really  
17 just a subset of our overall transmission needs, i.e.,  
18 this is just the transmission that we're talking about  
19 needing to get remotely located renewable resources into  
20 the load center so it can serve load. Obviously, there's  
21 a whole lot of other transmission needs that we have for  
22 connecting and serving new customer growth, as well as  
23 reliability needs for the load pockets and everything,  
24 that we're not really focusing on today.

25 So Brian, if you give me the next slide, please.

1           Okay. So how do we go about determining the  
2 amount of renewable energy that's needed for a utility  
3 like APS? There's really two components to this equation.  
4 The first one I sort of labeled satisfying mandates. Of  
5 course, in Arizona, we have the Renewable Energy Standard,  
6 which specifies a minimum amount of renewable energy that  
7 we're going to need. It ramps up to a level of 15 percent  
8 of our retail energy sales by 2025. And I've got some  
9 numbers I'm going to work through in just a bit.

10           One of the key points I wanted to note is the  
11 distributed component of that being 30 percent. The  
12 significance of that is, obviously, because distributed  
13 energy sources like rooftop photovoltaic is at the  
14 customer's premises. They're already located in the load  
15 pocket. You don't need transmission for that. In fact,  
16 it's going to reduce the amount of transmission that we  
17 need overall.

18           The second part of this equation is what  
19 additional amounts of renewable energy might we specify  
20 through our resource planning process. And APS -- I'll  
21 give you some examples in just a second -- we just filed  
22 our resource plan a couple of months ago. We made an  
23 argument in there for having renewable energy over and  
24 above the minimum amount mandated by the RES rules for  
25 reasons of improving our energy source diversity,

1 mitigating other key risk factors like climate change, and  
2 also sort of some strategic reasons in terms of advancing  
3 technologies in the hopes that it will lead to lower cost  
4 and better technologies in the long-run from renewables.

5 If you can give me the next slide, please.

6 So now a little bit of numbers. So here is step  
7 one in terms of determining how much renewables we need.  
8 This is really forecasting how much renewable we would  
9 need to meet that minimum RES standard. So step one is  
10 our load forecast.

11 What you're looking at in the bar chart is our  
12 forecast of energy quantities that we need over time  
13 through 2025, starting at about 32,000 gigawatt hours a  
14 year of energy in 2009. And the purplish portion of that  
15 is the retail energy sales. There's a little sliver of  
16 yellow in there, which are our native load wholesale  
17 requirement sales, and some of that is to the electrical  
18 and irrigation districts in Arizona. And then the  
19 little -- the light blue part is energy losses.

20 So keep in mind that the way the RES is written,  
21 it's really the retail energy sales component there which  
22 is the key for determining the amount of renewables. But  
23 you can see sort of relatively slow growth over the next  
24 couple of years, but by the time you get out to 2025, you  
25 have got -- our forecast is 43,000 gigawatt hours a year

1 of retail energy sales.

2 Okay. Then the next slide.

3 So what that looks like translated into the  
4 requirements of the RES is shown on this graph. So really  
5 two components here. The nondistributed piece of it is  
6 shown in the light yellow there. So that gets up to  
7 70 percent of the overall total by the time you get to  
8 2025. The blue part is the distributed component. Okay.  
9 So the only thing I'm going to carry on from here is the  
10 nondistributed portion, because that's really the only  
11 thing that has relevance from a transmission perspective.

12 But the nondistributed portion, by the time you  
13 get to 2025, we're forecasting that we would need  
14 4,500 gigawatt hours of renewable energy sources to  
15 satisfy that. Okay.

16 Now, this is a chart that we showed in our  
17 resource plan filing. The reference is down at the  
18 bottom. So I've carried over the lime-ish green portion  
19 of it is really what I showed you on the last chart in  
20 terms of the nondistributed RES target, which got up to  
21 about 4,500 gigawatt hours by 2025. The lighter green  
22 segment is the amount that we recommended over and above  
23 that minimum requirement via our resource planning  
24 process.

25 Okay. You can see sort of a big lump, you know,

1 beginning the next couple of years through 2015, '16, '17.  
2 We really -- one of the key aspects of our resource plan  
3 was we really wanted to try to accelerate the deployment  
4 of renewable resources with the hope that it's going to  
5 lead to better technologies and costs over time. And that  
6 maybe even if we see positive results there, the back end  
7 of our resource plan will be adjusted accordingly as we  
8 march through time.

9 But to get to the bottom line here, the total  
10 amount of nondistributed renewable resources specified in  
11 our resource plan by 2025 is about 6,000 gigawatt hours.  
12 That's how high it gets by 2025.

13 Okay. So now I'm making sense of the numbers.  
14 6,000 gigawatt hours, and I want to try to put it in some  
15 different terms that might make more sense to you.  
16 Currently, in our -- let me just pause for a second and  
17 just talk about what we have under contract right now.  
18 We've got about a quarter of that already either in  
19 operation or under contract. The largest portion of it is  
20 Solana. Solana is about 900 gigawatt hours a year, not  
21 quite half of -- or more than half of that total up there.  
22 So about 25 percent, or a little bit more than a quarter  
23 of our requirements. So the remaining amount,  
24 4,350 gigawatt hours.

25 Now let's talk in megawatt terms for a second.

1 If you use sort of that currency, the unit of measure  
2 being a Solana-type CSP solar plant, that 4,350 gigawatt  
3 hours would translate into about 1,400 megawatts of  
4 additional solar CSP plants. Okay.

5 Now, if I was to do the same thing with wind, get  
6 that same amount of energy with wind, assuming a  
7 30 percent annual capacity factor, which sort of by my  
8 reckoning is probably towards the better end of the scale  
9 of what is available in Arizona, it's about 1,650  
10 megawatts.

11 The third bullet, geothermal energy. Of course,  
12 this is like a base load source that's going to operate  
13 pretty much all of the time. You're talking just shy of  
14 600 megawatts of geothermal energy. And obviously, you  
15 could use some combination of all of those to meet that  
16 energy requirement.

17 Just to pause for a second, when you think about  
18 1,400 megawatts of solar CSP plant, I'll talk about  
19 transmission terms for a second. That's about what a  
20 500kV line, a single 500kV line would carry. So that's  
21 about the magnitude if I was to translate it into a  
22 transmission need. Now, keep in mind, though, this is  
23 just from a perspective of meeting APS's requirements to  
24 serve our native load customers.

25 Okay. Next one. So now let's switch sides to



1 the transmission side for a second. When we talk about  
2 our resource needs and we identify them in the resource  
3 plan, we make assumptions in terms of the amounts, types,  
4 and timing. We also assume locations of those renewable  
5 resources. Okay. Probable locations is the way I termed  
6 it up here. It's really based on what we've learned  
7 through some of the marketing engagement that we've had  
8 over the last several years that Commissioner Newman was  
9 referring to. Our interactions with the marketplace  
10 really help us define what we think the most valuable  
11 renewable resources are and where those would be located.  
12 Those assumptions get translated into our resource plan.

13 The second step, assessing the capability of the  
14 existing transmission system to support renewable  
15 resources, I'm not going to talk about that further  
16 because I want to talk off of a little schematic that I  
17 have in just a slide or two.

18 And then the other part of the resource plan is  
19 identifying the transmission additions that we're going to  
20 need to support the resource plan in total.

21 What we specified in our resource plan is we saw  
22 a couple of transmission needs through that resource plan  
23 horizon, which was 2025. Certainly, we need generator  
24 interconnections, but we also felt like a robust part of  
25 that resource plan was additional Palo Verde east capacity

1 that we will be needing, we specified in the 2018 time  
2 frame. Certainly, you know -- and I'll talk about that in  
3 just a little bit more in another slide or two.

4 Okay. Then the regional transmission planning  
5 process, and then this is a vital part of the process. So  
6 throwing it over to the transmission planning side. I'm  
7 not going to speak about it any further, because that is  
8 what Rob is going to be speaking about in the next  
9 presentation.

10 Okay. So what I tried to do here is this is from  
11 the APS perspective. And again, just to transmission  
12 types needed to support different types of resources that  
13 we've got specified in our plan. Starting from the top,  
14 energy efficiency, distributed renewables, demand  
15 response, all of those are internal to the load pocket.  
16 What is the transmission solution you need? Well, you  
17 don't need any transmission. In fact, it's beneficial in  
18 terms of reducing the overall transmission need.

19 So one of our topics of the energy efficiency  
20 workshops that we've been having over the last couple of  
21 weeks, certainly that's going to have a beneficial impact  
22 of delaying or reducing the overall amount of transmission  
23 needed.

24 The second row down termed solar CSP and solar  
25 PV, this is really large-scale type applications is what I

1 was referring to for PV.

2 Where did we see the most probable locations?

3 Certainly not all of the locations, but where have we seen  
4 the most development activity? In and around the Palo  
5 Verde Hub and points west of Palo Verde, the Gila Bend  
6 area, Yuma, and also sort of down that -- I'll call it the  
7 southern corridor or the I-8 corridor down there. We have  
8 seen a whole lot of activity solar-wise on those.

9 So what is the type of transmission we need?

10 Certainly generator interconnections, but also this is a  
11 key -- the key part of meeting that -- bringing that to  
12 the load center is additional PV east capacity, and I'll  
13 talk more about that in the next slide.

14 You know, I want to pause for a second and say,  
15 you know, the additions that we've already specified in  
16 our 10-year plan coming from the Palo Verde Hub and the  
17 new Delaney substation through the planned Sun Valley  
18 substation and up to TS-9, those all helped to increase  
19 that PV east transmission capacity. And those are really  
20 key elements of supporting our overall resource plan, but  
21 also the ability to move renewable resources into the load  
22 center.

23 The third one on the list is wind. Where do we  
24 see likely locations? Northern Arizona and New Mexico.  
25 And so we've got really two transmission solutions there

1 either utilizing the existing transmission system or  
2 building new transmission system. And I'm going to make  
3 some comments about that also on the next slide.

4 One of the things that we mentioned in the  
5 resource plan was that we really saw a lot of capability  
6 in our existing transmission system to import wind,  
7 particularly from potential Arizona locations.

8 Down on the list a little further, the gas  
9 turbines, this is peaking capacity that we've identified  
10 in the resource plan. We really see two primary  
11 locations. One of them could be out by the Palo Verde Hub  
12 where there's already a lot of gas-fired capacity, but  
13 also locations internal or adjacent to the valley network,  
14 sort of akin to what SRP has proposed in their peaking  
15 proposals, and also the Coolidge generating station.  
16 That's the type of thing that we're talking about here.  
17 This could also benefit from additional PV east capacity  
18 if additional capacity is added out in the Palo Verde Hub.

19 So I think one of the key themes that you see in  
20 the transmission solutions here is you see the PV east  
21 capacity as potentially being a very robust segment to  
22 concentrate on for transmission additions in the future.

23 So now to the schematic, if you would, Brian.  
24 Thank you.

25 This is really just a real high-level schematic

1 of the APS transmission system. And to orient you for a  
2 little bit, sort of the box in the middle is the Phoenix  
3 metro area, with the green being the major substations  
4 like Westwing, Pinnacle Peak, and Kyrene. And to give you  
5 a feel for how the slide is laid out, the yellow circles  
6 with the real funky little symbol in them really represent  
7 potential locations for wind capacity.

8           We have seen -- if you look at it and say, we've  
9 really seen wind capacity coming at us from every single  
10 angle or every direction from different parts of our  
11 system. Even sort of the northern Mexico along the  
12 coastal range down there, we've seen some robust wind-type  
13 proposals from there.

14           Now, getting back to the transmission side,  
15 Chairman Mayes, you mentioned sort of this import path  
16 from Four Corners to Cholla to Pinnacle Peak as being a  
17 constrained transmission path, and I'll certainly echo  
18 that. The one point that I'll make, though, is that that  
19 constraint exists really in the summertime, and  
20 particularly during the on-peak usage periods, hot summer  
21 afternoons when we're fully utilizing that transmission  
22 path.

23           You know, the potential synergy is the fact that  
24 wind resources really -- that's really when they're not  
25 producing at their maximum levels, at least from what

1 we've seen. In the springtime and other times of the year  
2 when wind is producing sort of more at the full  
3 output-type levels, that transmission path is not fully  
4 utilized. And there is some potential there to create a  
5 synergy of filling wind energy into the -- I'll call it  
6 the valleys of the transmission system usage.

7           Now, sort of moving to the west and talking about  
8 the Navajo path and the Mead path, we've also seen some  
9 fairly robust wind development that could connect to both  
10 of those paths. The fortunate thing for us is that both  
11 of those paths, at least from the APS perspective, we have  
12 import capacity, and we project to have more import  
13 capacity available over those paths. So those are some  
14 avenues where if a wind project interconnected to those  
15 paths that we would have available transmission capacity  
16 without having to do further upgrades than what is planned  
17 in the next year or two.

18           Now switching to the solar side of the equation,  
19 we have this big circle of solar sort of around the Palo  
20 Verde Hub and Delaney substation, all of the way out to  
21 Yuma and down along that I-8 corridor, and all of the way  
22 sort of west out to the California border. Some of the --  
23 really, some of the best solar locations probably in the  
24 world, definitely in the United States, and there's been a  
25 huge amount of development activity out there. And, of

1 course, I put the Solana CSP plant down by Gila Bend sort  
2 of in that same bucket, although it's not shown there.

3 The point I wanted to echo again was sort of the  
4 imports. We've seen a lot of development activity sort of  
5 right adjacent to the Palo Verde Hub and that planned  
6 Delaney substation. And so the importance from my  
7 perspective of the dashed lines representing the projects  
8 that are already identified in the 10-year plan and have  
9 received -- have gone through the permitting process, the  
10 importance of those projects in terms of being able to  
11 move renewable resources into the load center, those are  
12 certainly a big part of our plans going forward.

13 CHMN. MAYES: Brad, could I just pose a couple of  
14 questions?

15 MR. ALBERT: Sure.

16 CHMN. MAYES: In terms of -- how much would your  
17 analysis of -- I think what you're saying, maybe a little  
18 cryptically, is that APS thinks that it can satisfy its  
19 RES requirements, current RES requirements, with solar  
20 projects in that Sun Valley area in that corridor; is that  
21 correct?

22 MR. ALBERT: Sort of adjacent to the Delaney,  
23 Palo Verde Hub, Gila Bend-type location.

24 CHMN. MAYES: In the Palo Verde Hub. But if the  
25 Congress passes, which I believe they're going to, or if

1 this Commission increases the Renewable Energy Standard to  
2 25 percent, if either Congress does that or this  
3 Commission does it, or both, does that change your  
4 analysis?

5 MR. ALBERT: Chairman Mayes, yeah, it certainly  
6 would. And to go backwards one step, I think our resource  
7 plan would specify by 2025 being somewhere around  
8 18 percent, roughly, measured in the same way as the RES  
9 was against retail energy sales. So the 25 percent would  
10 represent another, you know, pretty significant step above  
11 what we have in our resource plan.

12 But in the resource plan, we also identified the  
13 need, what we felt the need for additional PV east  
14 capacity within the -- and we specified in 2018, so it's  
15 within the time frame of our resource plan. That's in  
16 addition to what has already been identified in the  
17 10-year plan.

18 CHMN. MAYES: And by PV east, do you mean along  
19 the I-10 corridor and also the along the North Gila, the  
20 existing North Gila route? Go ahead.

21 MR. ALBERT: Chairman Mayes, what I was really  
22 referring to was the part from the Palo Verde Hub, and  
23 throw Delaney into that equation to the east into the load  
24 center, the Phoenix metro area.

25 CHMN. MAYES: Oh, into the load center. Okay.



1           MR. ALBERT: And the reason why we said that was  
2 because both in our interconnection queue and what we've  
3 seen in the RFPs that we've conducted, we've seen many  
4 times over the thousands of megawatts, many times over the  
5 amount that we need to satisfy the APS native load  
6 customer need, even if the RES requirement was ratcheted  
7 up to 25 percent.

8           I'm sorry. Did that answer your question?

9           CHMN. MAYES: I guess it does. But presumably,  
10 and certainly the other utilities can speak to this, but  
11 presumably if those requirements are increased, you know,  
12 you would be potentially forced to look outward from -- or  
13 at least some of the utilities, wouldn't they, from that  
14 hub area that you're looking at now?

15          MR. ALBERT: Yeah. And I think from what we've  
16 seen, we've seen so much development activity right there  
17 around the hub, Delaney, and the Gila Bend area, that even  
18 if the requirement was ratcheted up to 25 percent or so,  
19 we would still identify plenty in that area to meet the  
20 APS native load requirements.

21          CHMN. MAYES: What about the other utilities?  
22 You're saying everybody, all Arizona utilities can meet  
23 all of their RES requirements in that area?

24          MR. ALBERT: I should be careful just to speak  
25 from the APS perspective here, so I'm speaking from the

1 APS perspective.

2 CHMN. MAYES: Because I'm looking at Rob's  
3 chart -- well, the SRP -- the SWAT chart showing the  
4 interconnection request, and we have an awful lot of  
5 interconnection requests throughout the state throughout  
6 our renewable energy zones, so this question of where our  
7 utilities are going to go or need to go becomes pretty  
8 important, in addition to what utilities outside of the  
9 state of Arizona may need or require.

10 MR. ALBERT: Right. I think, Chairman Mayes, the  
11 other perspective is this. We are certainly open to -- if  
12 you can create a better outcome for our customers by  
13 heading west, let's say it's on the I-8 corridor to say  
14 something, that that could provide another value driver  
15 for pursuing that transmission path, i.e., if there's  
16 better solar conditions, cheaper land. I don't know what  
17 all of the variables to that equation are that could cause  
18 you to want to go further afield.

19 CHMN. MAYES: Okay. And those are issues that  
20 you'll be looking at.

21 MR. ALBERT: Absolutely. That's part of this  
22 process.

23 CHMN. MAYES: And then the other question -- I  
24 know that you said that you think that the Four Corners  
25 line or the Four Corners/Cholla, is that what it's called?

1 What is that line called?

2 MR. ALBERT: That's how I always refer to it.  
3 I'll call it the Four Corners path in general.

4 CHMN. MAYES: You know, and it shows zero ATC,  
5 doesn't it?

6 MR. ALBERT: Yes. Correct.

7 CHMN. MAYES: But you're saying that APS thinks  
8 that it could be used for wind projects along that path?  
9 That's APS's view now? Because that was not your view  
10 three or four years ago when I unsuccessfully -- I was  
11 unsuccessful in persuading my colleagues that we should  
12 approve a wind project in that area. And the reason that  
13 it was shot down was that APS was saying, oh, there's no  
14 ATC. But now you're saying there's ATC?

15 MR. ALBERT: Chairman Mayes, yeah, that's exactly  
16 what I'm saying. And one of the reasons --

17 CHMN. MAYES: So what has changed since three  
18 years ago?

19 MR. ALBERT: It's really -- we have really tried  
20 to -- I'll call it optimize and try to make the best use  
21 out of the existing system that we can. Certainly, the  
22 situation with the ATC and the ability to support the --  
23 there is zero ATC. That's a summertime on-peak concern.

24 And one of the reasons why it occurs that way is  
25 because we've actually got some peaking type resources

1 that utilize that path, particularly down at our Saguaro  
2 station down in the lower right-hand corner. Those are  
3 the type of units that only operate for a limited period,  
4 you know, in the hot-summer-afternoon-type period.

5 Now, there's a commercial challenge associated  
6 with this also, because I can't make a promise to a wind  
7 developer to take all of the energy that they can produce.  
8 There has to be some curtailment provisions that have to  
9 be worked into the contractual terms and everything.  
10 However, even taking that into account, we think that  
11 that's an effective way to optimize the use of the  
12 transmission system.

13 CHMN. MAYES: Okay.

14 MR. ALBERT: Brian, could you give me the next  
15 one.

16 Okay. So now I just wanted to sort of highlight  
17 this difference between the planning process and the  
18 procurement process. And I really look at resource  
19 planning as providing a general direction to our overall  
20 resource activities where we're making assumptions.  
21 They're informed assumptions, but they're still  
22 assumptions in terms of the types of renewable resources,  
23 timing, location, but they do provide a high-level path  
24 for us. Now, all of those assumptions get turned into  
25 reality, so to speak, in the procurement process where we

1 go out and try to seek the right renewable resources. And  
2 now we're talking about specific amounts, timing, and  
3 things.

4 Now, what could lead to differences between the  
5 planning process? Certainly, when we go to do a  
6 procurement and we find out what is out there in the  
7 marketplace, size could be a factor. I mean, economies of  
8 scale may dictate that you do a little bit something  
9 differently because of just project size and the  
10 economies. Certainly, technology is going to continue to  
11 evolve over time.

12 And location, you know, what Commissioner Newman  
13 was referring to with the Kingman facility that was in the  
14 newspaper this morning. We're constantly learning about  
15 activities in other parts of the state that we hadn't  
16 seen, you know, robust activity in, and certainly those  
17 things can adjust our resource plans over time.

18 CHMN. MAYES: Do you have the ATC to get that  
19 down to Phoenix?

20 MR. ALBERT: Yeah. If I recall, the Mead, the  
21 path in from Mead down into the Westwing, we do have ATC  
22 on that path. We have existing rights on that 500kV line.  
23 We have a little bit of use for that right now on a market  
24 purchase that we have that is going to expire in 2015, but  
25 also the path is being upgraded also.

1           One of the challenges -- not to get so rosy about  
2 that particular path -- one of the challenges that we've  
3 run into, it's a joint participant project with many  
4 utilities involved. And one of the things from the  
5 options from the transmission perspective is to convert  
6 that line to a DC line. It's an AC line right now.

7           It really is a problem for a renewable developer  
8 that wants to tap in somewhere sort of in the middle of  
9 that transmission path, because those AC to DC conversion  
10 facilities are so expensive. Not a problem for someone  
11 that taps in at the substation where you're already  
12 planning to put those conversion facilities in, but the  
13 midstream-type things can be very expensive. So a  
14 challenge with that path also.

15           Okay. So we've talked about sort of the APS  
16 perspective. I want to switch to the out-of-state utility  
17 perspective for Arizona renewable resources. And, you  
18 know, if I put myself in the shoes of an out-of-state  
19 utility like a California utility, I'm going to go through  
20 the same process that we're going through here of looking  
21 at my availability of in-state renewable resources and  
22 out-of-state renewable resources. And the question that I  
23 have there is: Will they find Arizona to be a favorable  
24 source for renewable energy?

25           Number one is the economics, but we've also got

1 sort of state policies that affect that equation, not just  
2 state policies on the Arizona side but the California  
3 side, because it's all relative. How friendly of a place  
4 is it for California siting renewable energy resources and  
5 the land use issues? That's certainly part of the  
6 equation that the Californians are going to look at to  
7 turn to Arizona.

8 CHMN. MAYES: I think I'll hold my tongue on that  
9 point. I will note, however, the recent call by Senator  
10 Feinstein to put 800,000 acres of the Mohave desert in  
11 California off limits, which suggests to me that we're  
12 going to see a lot more interest in developing in Arizona,  
13 and, quite frankly, I think that's okay.

14 MR. ALBERT: And that's certainly one of the  
15 things that we need to put into the equation here.

16 Now, the merchant generation here, obviously,  
17 over the last 5 or 10 years, we saw a whole lot of  
18 merchant activity on gas-fired, combined-cycle plants, and  
19 a lot of those were built, and a lot of them were built on  
20 a speculative basis.

21 I have not, however, seen renewable projects  
22 being built without long-term utility commitments  
23 associated with them. Why? Because utilities are  
24 still -- or renewable resources are still higher than  
25 current market. And so I think the bottom line here is

1 that, at least from my point of view, renewable resource  
2 projects seem to be driven by utility commitments, and  
3 that's the way that they've been turning from sort of  
4 development into real projects that actually get  
5 constructed.

6           So the challenge here is just in terms of sorting  
7 out all of this merchant activity. We've got thousands of  
8 megawatts and, as Commissioner Newman said, hundreds of  
9 different developers active here. How much of that is  
10 going to turn from being sort of development ideas into  
11 actual projects that go forward, get built, need  
12 transmission? That's one of the challenges that we have.

13           Okay, next slide. This is my last slide -- and  
14 I'll apologize that this is a late addition from the  
15 advanced copy that we distributed, -- just talking about  
16 how transmission cost recovery works right now. In our  
17 normal planning process for a utility transmission line,  
18 we have a planning process in this state for the 10-year  
19 BTA review process, and the lines get included that  
20 actually provide benefits to the system and help us meet  
21 the load growth and reliability needs for our customer  
22 base.

23           Once that project gets built, it gets included in  
24 the FERC rate base for all of our transmission customers,  
25 including, obviously, the APS retail customers are the



1 largest transmission customer. And at least from the APS  
2 perspective, we have an adjustor mechanism -- I'll refer  
3 to it as the TCA -- that provides a mechanism for  
4 recovering the cost of those transmission projects from  
5 our retail customers.

6 The other side of that equation is the generator  
7 interconnection process. And this is very much a process  
8 that's been established by all of the transmission-  
9 providing utilities in accordance with FERC guidelines.

10 And some of the key aspects of that are  
11 essentially that the way the policies work right now, the  
12 generators pay for the lines that connect their individual  
13 renewable project to the transmission system, particularly  
14 if those lines only benefit that generator. Additional  
15 system upgrades that might be required to interconnect the  
16 generator would be credited -- the cost of that could be  
17 credited back to the generator over time. And this is  
18 where -- the case where those additional upgrades could  
19 provide a benefit to the overall system over time.

20 This is sort of the -- I'll call this the  
21 policies and everything that exist under a status quo  
22 approach today. And I realize a big part of the process  
23 that we're in right now and the discussions that we're  
24 having are: How do we do something different and make  
25 different things happen? So this is just to sort of

1 ground us in the foundation of where things are at today.

2 So with that, that was the end of my prepared  
3 stuff, and so I would be happy to take any questions that  
4 anyone has.

5 MS. ORMOND: I think, actually, in the interest  
6 of time, we are going to hold questions. And is it okay  
7 to move to our next presenter?

8 Okay, great. So we're going to bring up Rob  
9 Kondziolka with Salt River Project to talk about  
10 traditional transmission planning and some of the forms  
11 that are involved, and then we'll take a break.

12 Actually, does anyone have a question while we're  
13 pulling up the presentation?

14 (No response.)

15 MS. ORMOND: Okay.

16 MR. KONDZIOLKA: Okay. Well, Chairman Mayes, and  
17 workshop attendees, good morning. My name is Robert  
18 Kondziolka. I am here to provide an overview of a  
19 planning organization to provide a foundation for the  
20 groups that you may be involved with or that ultimately  
21 interact in producing products that eventually come before  
22 this Commission and in other arenas.

23 I would like to start off by letting everybody  
24 here know, because I didn't hear that comment at the very  
25 beginning, Chairman Mayes asked if we would be filing this

1 material in the docket, which indeed we will. But I  
2 wanted everybody else to know that all of the presentation  
3 material will be posted at the WestConnect website. So it  
4 will be posted at WestConnect.com under the regulatory  
5 heading. So hopefully by -- I think within two days we'll  
6 have it ready to access. So thank you.

7           The other thing that I would like to note here,  
8 when you look at my slides there are a great number of  
9 acronyms. And I will certainly spell them out as we go,  
10 but to make it easier for you to keep track, one of my  
11 last slides is a list of acronyms. So you don't have to  
12 jot them all down, and you'll be able to reference them in  
13 the future.

14           As the slide implies, this will be an overview.  
15 As most of you who are already engaged in the process, you  
16 recognize that the planning process is much more complex  
17 than the simplistic slides and overview that I'll be  
18 providing today.

19           Chairman Mayes made a comment about upcoming  
20 potential federal legislation. I do not plan on  
21 addressing that. The planning organizations here are  
22 focused on the west. There is no national planning that  
23 is currently going on, but certainly there are a lot of  
24 developments that are in the works. And we can certainly  
25 address what those implications might be, but since they

1 are not a done deal by any stretch of the imagination, I'm  
2 going to focus on those that are currently in place and  
3 are working.

4 I'll start off with the priority of groups that  
5 are out there, and there is a series of bubbles here. Let  
6 me describe what these series of bubbles are intended to  
7 represent.

8 The dashed green one represents the western  
9 interconnection. Within the western interconnection there  
10 are a lot of subgroups, and I'll go through these. And  
11 then on the periphery, there are groups that interact with  
12 these groups. As you can imagine, there is a lot of  
13 movement of data and work between the different groups,  
14 and they each serve a different function. So let me start  
15 on the periphery, and then we will generally work in.

16 When we look at the left side, there are three  
17 bubbles there. The first one is the California RETI, or  
18 Renewable Energy Transmission Initiative. And below that  
19 there is the Nevada RETAAC for the Renewable Energy  
20 Transmission Access Advisory Committee. And then below  
21 that there is the ACC BTA, which is, if you're here today,  
22 I hope you know what that means.

23 If you look at the groups on the left, those are  
24 state initiatives. So that would be the thing that you  
25 would want to distinguish that group as opposed to some of

1 the other ones.

2 If we look at the right side of the large bubble,  
3 there are three listings. There is the WIA for the  
4 Wyoming Infrastructure Authority. There's CEDA for the  
5 Colorado Clean Energy Development Authority. And then the  
6 last one there is the New Mexico RETA for the Renewable  
7 Energy Transmission Authority. You will note that those  
8 are all authorities as opposed to state initiatives.

9 Above that we have the WGA and CREPC and WREZ.  
10 So Western Governor's Association, and then CREPC is the  
11 Committee on Regional Electric Power Cooperation. And  
12 then, currently there is an initiative going on, which is  
13 WREZ, which is the Western Renewable Energy Zones. And  
14 that is an effort that is sponsored by the Western  
15 Governor's Association and funded by DOE.

16 The WREZ process -- and I will touch on it in a  
17 later slide -- had a predecessor, which some of you may  
18 recall because you may have worked on it, which was the  
19 CDEAC, which was the clean energy development -- clean  
20 development --

21 MS. ORMOND: Clean and Diversified Energy  
22 Advisory Committee.

23 MR. KONDZIOLKA: Clean and diversified energy.  
24 Yeah. Well, and then the committee started off. Okay.  
25 So they had an issue beforehand. I guess a key of WGA has

1 been involved with transmission planning for the last  
2 10 years in different forums. They are not a formal  
3 planning organization, though.

4           Then, as we go inside the bubble, most of you are  
5 familiar with WECC, which is the Western Electricity  
6 Coordinating Council, and they have responsibility for the  
7 three main committees. I put two up here. One is the  
8 PCC, which is the Planning Coordination Committee. And  
9 then there is the TEPPC, the Transmission Expansion  
10 Planning Policy Committee. I have some slides to show  
11 their organization on some additional slides, but they  
12 have the overall role of looking at all material  
13 interconnection-wide.

14           Then, within the Western interconnection, you see  
15 there are three sub-bubbles, and that gets into our  
16 subregions. Up in the upper left of that bubble there is  
17 NWPP for the Northwest Power Pool Area, and then there are  
18 three groups operating within the Northwest Power Pool.  
19 And then we have a future slide to kind of show this, so I  
20 won't spend any time here.

21           And then, under that, there's that bubble in  
22 yellow, which is PSPA for Pacific Southwest Planning  
23 Association, and that is generally the greater California  
24 area, and under there you'll see there's the California  
25 ISO. There is the Los Angeles Department of Water and

1 Power, and then some others.

2           And then, more importantly for us, as we move to  
3 the right there is WestConnect. And within WestConnect,  
4 we have three subregional planning groups. There is CCPG  
5 for the Colorado Coordinated Planning Group; SSPG, which  
6 is the Sierra Subregional Planning Group; and then SWAT,  
7 which, if you're here today, again, I hope you're familiar  
8 with SWAT, which is the Southwest Area Transmission  
9 Subregional Planning Group. I will touch on these groups  
10 in more detail as we move forward.

11           I'm glad I've got my slide in front of me  
12 because, as I look at it here, I can't read the detail,  
13 all of that slide. The good news is, if you are close to  
14 the screen, you'll note towards the bottom that I have not  
15 shown for this slide here, which is the Western  
16 Electricity Coordinating Council, or WECC, I have totally  
17 eliminated for clarity purposes -- not eliminated, but  
18 just not shown here the operating committee structure.  
19 Within WECC, the operating committee has a huge  
20 organization and would have made this slide even more  
21 difficult to read.

22           But I have highlighted four areas within WECC  
23 that are dealing with issues that have interest to this  
24 group. In the upper left we have the Transmission  
25 Expansion Planning Policy Committee. They deal primarily

1 with economic issues. I'll touch on that in a moment. In  
2 the bottom right, we have highlighted in red the Planning  
3 Coordination Committee, which primarily deals with the  
4 reliability issues, and I'll touch on that in more detail  
5 in a future slide.

6 And there are two other bubbles there. One,  
7 again, you probably can't read it, but it is known as the  
8 Western Renewable Energy Generation Information System, or  
9 WREGIS. And that is a group that was formed to track  
10 qualified renewable energy generators and their  
11 production, and that's primarily a data element within  
12 WECC.

13 And then under that last bubble there under the  
14 Joint Guidance Committee is a new group that was formed  
15 called the Variable Generation Subcommittee. And it was  
16 just formed last quarter of this year, with recognition  
17 that the renewable generation looks quite different than  
18 the type of work we've done with more traditional forms of  
19 energy. It would have recognized we really needed to  
20 improve our modeling, and we needed to improve how we do  
21 our planning, and how we do our operating studies with  
22 these forms of generation.

23 So in recognition of that, this Variable  
24 Generation Subcommittee was formed and will be focused on  
25 bringing together members of the Operating Committee and



1 the Planning Coordination Committee, and other interested  
2 stakeholders, in really making certain that we have access  
3 to the right data and develop the right type of models to  
4 include for study purposes, and that would be both  
5 planning and operating.

6 I have a slide that you can more easily see.  
7 This is the Transmission Expansion Planning Policy  
8 Committee. Again, it's a relatively new committee. The  
9 important thing is that they are focused on economic  
10 transmission planning. They have three key focuses as far  
11 at their charter, and that is develop and maintain an  
12 interconnection-wide database that can be used for  
13 economic transmission expansion planning modeling. Then  
14 two is to perform the modeling for analysis of the Western  
15 interconnection. And then three is to manage the planning  
16 processes. And that would be management of the processes  
17 for coordination, with the directive of pulling together  
18 those subregional planning groups that were shown on the  
19 previous slide.

20 So you can imagine that there's just a lot of  
21 interaction going through the different groups, and so  
22 TEPPC has responsibility of trying to manage those  
23 elements.

24 Moving on to the next slide, this is an overview  
25 of the Planning Coordination Committee. Again, this group

1 is focused on reliability studies. Instead of spending a  
2 lot of time mentioning what each of these groups do, what  
3 I would like to point out is that under the Technical  
4 Studies Subcommittee is the focus for WECC for the  
5 regional planning and the path rating process. So many of  
6 you have heard about this, and this is where that function  
7 is managed.

8           And then underneath TSS, you'll see that there's  
9 two blocks there: Modeling and Validation Work Group, and  
10 System Review Work Group. When we talk about a base case,  
11 we talk about where is the starting point for doing this  
12 transmission planning? What is assumed to be included?  
13 You know, which generation, what transmission line.

14           It's at this stage where we have the groups  
15 performing the development of that information. It then  
16 gets posted on the WECC website, and ultimately, then, the  
17 planning groups would access that information to build the  
18 study work that is used such as in SWAT or within in  
19 WestConnect.

20           This is a further eye test for those of you who  
21 are on the side with me. This is an overview of the  
22 Western Governor's Association and affiliations as far as  
23 their interactions with groups moving forward. I think in  
24 the interest of time, instead of going through all of  
25 this, some of you may be familiar, I would like to just

1 focus a little bit on the box to the right of the Western  
2 Governor's Association, and that is the WREZ project.

3 This is an initiative by the Western Governor's  
4 Association that is funded by DOE. And this group, or the  
5 initiative, has a couple of key elements to it. One is to  
6 start off by identifying renewable energy zones, and  
7 they've already completed that part of the process. But  
8 once they've done that, they are moving forward with  
9 applying successive layers of screening criteria which  
10 would narrow down these energy zones into qualified zones,  
11 and then into designated zones. And the criteria first  
12 starts off with being more physical-type criteria, and  
13 then the second layer tends to be more of the biological  
14 criteria.

15 Ultimately, what they want to do with this  
16 initiative is once they move into the designated zone area  
17 is to be able to identify what would be the appropriate  
18 transmission that would be associated with these energy  
19 zones that they've identified. And then further is to  
20 work with the load resource planning groups that Brad  
21 talked about in putting together priorities on an  
22 aggregate basis instead of an individual basis to  
23 determine the most desirable resource areas. And they  
24 have provided and developed some Excel worksheets which  
25 would help a resource planning group use this information

1 that they have developed in decision-making. Exactly  
2 where that goes has not been decided, and that is a future  
3 activity and a future part of this WREZ process.

4 Now, I was going to address this a little bit  
5 when we get to the SWAT overview, but SWAT has had  
6 interaction with this process. SWAT got somewhat ahead of  
7 the WREZ process. You heard Chairman Mayes talk a little  
8 bit about that time frame, and SWAT was about a year ahead  
9 in the identification of energy zones.

10 While some of that information got incorporated  
11 into the WREZ process, the WREZ process has now provided a  
12 more detailed analysis and has refined that information  
13 quite a bit. And now, as you will hear from Amanda's  
14 presentation in the afternoon, that information is being  
15 brought back into the group in which she and Greg Bernosky  
16 are chairing, and using that information, then, to further  
17 the work within Arizona.

18 Okay. We talked a little bit about acronyms and  
19 there were simplistic bubbles. This now becomes the  
20 simplistic free-flow diagrams. We don't need to spend a  
21 lot of time on going through here. It's important to note  
22 that don't take these lines too seriously. One, they are  
23 intended to be generic. I really had a great slide which  
24 was very detailed that nobody liked. So we pulled that  
25 one and we went with a simplistic one just so you get a

1 feel for where these groups are generally operating. And  
2 you will notice that there is some overlap. Some of that  
3 is intentional. Some of it is because it's just not  
4 highly refined, depending upon who is participating and  
5 who is doing what.

6           What is important to note here is that  
7 WestConnect, which is sort of that aqua blue color, it  
8 incorporates three of the subregional planning groups,  
9 which is the Colorado/Wyoming area, the Desert Southwest  
10 area, and then the Sierra area, which is Nevada and then  
11 parts of northern California. And it's important to note  
12 that when you see that northern California included,  
13 that's not all of northern California. That is the  
14 transmission under the TANC, which is Transmission Agency  
15 of Northern California; SMUD, which is the Sacramento  
16 Utility District, and then Western. So it's those  
17 facilities and not all of the California ISO facilities  
18 that are included in there.

19           WestConnect is a contractual relationship of the  
20 utilities in this footprint, and they are focused on  
21 improving the coordination, enhancing market  
22 opportunities, and promoting initiatives that improve the  
23 overall performance within this footprint. Some key  
24 initiatives and work that is performed by WestConnect, and  
25 one is WestConnect issues an annual 10-year transmission

1 plan. It's posted on the WestConnect website.

2 As Chairman Mayes talked about the ACC Biennial  
3 Transmission Assessment process and the utility filings,  
4 WestConnect takes that a step further. And if you have  
5 not had a chance to see that, it is an excellent product  
6 for understanding an even bigger picture. And much of the  
7 input is very, very similar to the input that goes into  
8 the Biennial Transmission Assessment for Arizona. There's  
9 a lot of good summary information in that report.

10 WestConnect also performs some WestConnect  
11 footprint-wide studies which are then captured in the  
12 report. WestConnect also hosts and sponsors the annual  
13 TTC ATC workshops. So there were questions earlier about  
14 what type of transfer capability or available transmission  
15 there is in the system. Every year, all of the  
16 WestConnect utilities put together a presentation and then  
17 answer the detailed questions that would be directed of  
18 that nature. And for this year, the TTC ATC workshop will  
19 be held in August.

20 Moving forward, this is the SWAT footprint. It  
21 covers New Mexico, Arizona, southern Nevada, Imperial  
22 Valley of California, and the El Paso area of Texas. And  
23 you'll notice there's a reference to the website. And all  
24 of the SWAT materials for pretty much the last nine years  
25 are located on the WestConnect website, so that would be

1 all of the reports, all of the agendas, all of the  
2 presentation materials, et cetera.

3           Moving forward, I'm going to go through this part  
4 somewhat quickly, because I don't think it's as important  
5 to spend time on it as opposed to knowing what is here.  
6 Here is the general area we just talked about for the  
7 Desert Southwest. So the orange line represents the  
8 overall SWAT footprint.

9           And then I'm just going to bring in each of  
10 the -- what we call the geographically located  
11 subcommittees. And the acronym is located there, and then  
12 you'll see in the bottom left-hand portion of the slide is  
13 a description of that acronym for future reference. So  
14 the CRT area, which is the Colorado River Transmission  
15 Group, pretty much addresses the transmission from the  
16 Palo Verde Hub all the way into California.

17           And then the CATS-EHV, standing for Central  
18 Arizona Transmission System Extra High Voltage, covers  
19 most of all of Arizona now for the 500 and 345kV system.

20           Within that area is the CATS-HV, so it stands for  
21 Central Arizona Transmission System High Voltage, and  
22 that's the Pinal County area within Arizona. We then have  
23 SATS, which is the Southeast Arizona Transmission Study  
24 Area. And as the description implies, it's the southeast  
25 corner of the state.

1           We then have AZ-NM for Arizona-New Mexico, and  
2   that is that border area between Arizona and New Mexico.  
3   And then, lastly, there's the New Mexico Transmission  
4   Group, which pretty much covers the entire state of New  
5   Mexico and when it was more focused on New Mexico issues.

6           An organization chart for SWAT is now on  
7   Slide 10. I think as you look at some of the names up  
8   there, I think if you don't have a complex,  
9   hard-to-pronounce name, then you don't qualify for  
10  chairman. Yeah. So if you have trouble with any of the  
11  names, you can certainly let me know or somebody else know  
12  and maybe we can change that criteria.

13          Helping the SWAT Oversight Committee is a  
14  Steering Committee, and that's just a committee of all of  
15  the chairs of all of these groups. That first layer  
16  underneath there are the subcommittees that were shown on  
17  the previous slide, and those are the geographically-  
18  located subcommittees.

19          That second layer down, and there are four boxes  
20  there, those are either work groups or task force. The  
21  first two are work groups that are SWAT footprint-wide,  
22  and there's a Short Circuit. And for those of you who are  
23  doing interconnections, I think you can understand the  
24  value of Short Circuit. That is to make certain we have a  
25  working database so that when we do interconnection



1 studies for anyone, we have a common platform for data for  
2 studying the impacts that may occur directly as a result  
3 of the proposed interconnection or within adjacent  
4 adjoining systems.

5           The next group is our Transmission Corridor  
6 Group. That is a new work group we formed this year, and  
7 it is a planning corridor group. It's not to identify  
8 specific corridors or routes. It is to work between SWAT  
9 and the multitude of land agencies in communicating  
10 information, needs. So we would be working with state  
11 land departments and would work with the federal land  
12 management agencies. Or, in the case of Pinal County,  
13 they are in the process of doing an update to their  
14 general plan, and we want to have input into their area as  
15 to corridors that they should be considering for future  
16 use.

17           On the far right is our Common Corridor Structure  
18 Separation Task Force. This was an initiative that was  
19 requested by the Arizona Corporation Commission. That  
20 group is in the process of finishing up this year, and we  
21 plan to present a report to the ACC sometime in the next  
22 quarter.

23           Then, in red is the Renewable Energy Transmission  
24 Task Force. Now it's R-E-T-T-F, but it's always gone by  
25 R-T-T-F. So the energy gets dropped out of the acronym,

1 but it actually is Renewable Energy Transmission Task  
2 Force. There were some questions before about when that  
3 was formed. It was formed in 2007, and the work that was  
4 done and the study work that was done in 2007 was a report  
5 that was filed with the Arizona Corporation Commission in  
6 2008.

7           When it started off, it started off with an  
8 Arizona focus only, and that was a result of the order of  
9 a previous Biennial Transmission Assessment. We  
10 recognized when we started the activity with this group,  
11 even though it was going to be Arizona focused and we had  
12 a deadline, it was going to be opened up so we did the  
13 entire SWAT footprint-wide. So in 2008, that became a  
14 SWAT footprint-wide task force. And it has then studied  
15 and produced maps and conceptual transmission which  
16 addresses the entire SWAT footprint area.

17           Then, as we move forward, the order on which we  
18 are here today was issued in December of 2008. As a  
19 result of that order, these two other subcommittees under  
20 RTTF were formed, and that is ARRTIS and the Finance  
21 Subcommittee, ARRTIS being the Arizona Renewable Resource  
22 and Transmission Identification Subcommittee.

23           Now, we have got RTTF, we have ARRTIS, and  
24 finance. And you'll notice there's no acronym there.

25           So Tom, with all of the fine work that you have

1 done, the one area you failed is to come up with a new  
2 acronym. So that's something that we will focus on.

3 But these two groups here are specifically --  
4 were specifically formed to focus and address the input to  
5 the utilities for this current BTA order. So this  
6 workshop here is through and by the ACC for regulated  
7 utilities. These two groups are providing input to the  
8 utilities to be able to respond to this order, and they  
9 were working through our Renewable Energy Transmission  
10 Task Force under the overall SWAT.

11 So the key is when you hear Amanda's presentation  
12 and you hear Tom's presentation, this is to provide input  
13 to everyone, and this would then be a representation of  
14 input from the overall SWAT community.

15 There is that list of acronyms. We're not going  
16 to go through them, but you'll have them when you download  
17 them from the website afterwards.

18 And with that, we can have questions. Or Amanda,  
19 it's your call, if you want to have that break.

20 MS. ORMOND: I think we are going to go ahead and  
21 take a 10-minute break until 11:30. If you have questions  
22 you can ask Rob during that break, great. If you have  
23 some when we come back, we can cover them then.

24 We will be talking next about the two different  
25 subcommittees, the ARRTIS and the Finance Committee that

1 Rob just talked about. So 11:30, please, thank you.

2 (A recess was taken from 11:20 a.m. to 11:30 a.m.)

3 MS. ORMOND: We'll go ahead and get started.

4 Take your seats, please.

5 Okay. In this segment of our meeting we're going  
6 to start talking about some of the subcommittees that have  
7 been working on renewable energy identification or  
8 transmission identification.

9 Greg Bernosky is on my left. He is the co-chair  
10 with me of this ARRTIS group. And the ARRTIS group stands  
11 for Arizona Renewable Resource and Transmission  
12 Identification Subcommittee. In the previous slides you  
13 saw that we are a subgroup of many, many other subgroups.  
14 So let's just leave it at that, and you guys can go look  
15 at all of the slides that were presented.

16 So the ARRTIS was created in January 2009 as a  
17 direct result of the BTA order, the order that the  
18 utilities should identify their top three transmission  
19 line proposals. And one of the reasons why we're sitting  
20 here today is because you have heard the term "chicken and  
21 egg." I call it a timing mismatch.

22 Renewable energy generation can be built in three  
23 to five years, maybe longer, maybe a little less.  
24 Transmission development can be built in seven to ten  
25 years. So that creates mismatch. Typically, when a

1 utility was going to build transmission in the past, they  
2 would contract for a generation source like a coal-fired  
3 power plant and they would begin construction of the  
4 transmission line, and the two would be built and would be  
5 completed at the same time.

6 Now when we've got renewable energy generation,  
7 since it can be built so much more quickly, we possibly  
8 could have generators out there that cannot have any  
9 transmission lines, or you will actually have to start  
10 building the transmission lines prior to knowing what  
11 generators are going to connect.

12 And so that's why we're trying to identify where  
13 are the most likely and potential areas to develop  
14 renewable energy transmission because you need to start  
15 building the transmission to get there at the same time,  
16 or start building the transmission, so when it's completed  
17 the generators that take less time to build will be able  
18 to access those transmission lines.

19 So the ARRTIS was to identify the potential areas  
20 for renewable energy. We are going to provide our  
21 information back to the Renewable Transmission Task Force  
22 group, which is the group that was created as a result of  
23 the last BTA. And then all of this information is really  
24 going to go the electric utilities to inform them so they  
25 can meet the order that's in the BTA.

1           So we have really broad participation in our  
2 group, and the next three slides are going to walk you  
3 through who participated. I think it's really important  
4 for you to see that we reached out to a lot of people. We  
5 had a lot of people come. This is not an exhaustive list,  
6 but it's meant to give you an idea of how broad our  
7 participation was.

8           Every meeting was webcast. And so no matter  
9 where you were located, you could dial up and see the  
10 presentations and see the mapping and hear the questions.  
11 So we had a pretty open process.

12           You'll see on this slide a lot of state agencies,  
13 a lot of federal agencies. A lot of these same  
14 organizations were the organizations that provided data to  
15 the process. Utilities, great utility participation.  
16 Tribal participation.

17           Technology, we had a lot of technology companies.  
18 One of the Commissioners had asked earlier about are we  
19 talking to all of the potential generation developers.  
20 The answer is, no, we're not talking to all of them, but  
21 any of you that are in the room that have not participated  
22 in our process, we more than welcome you to come forward.  
23 The developers have very, very valuable information to  
24 this process, because you obviously are working in the  
25 state and have an interest in where transmission ends up

1 being built.

2           One of the things that's really important is that  
3 where we decide to build transmission will facilitate  
4 renewable energy generation. So if a transmission line is  
5 built into area A, B, C, guess what? That's where the  
6 generation is going to spring up around. So it's  
7 important that we do this process well.

8           We also had some environmental groups, and then  
9 some other folks that participated.

10           So our process simply was to look at who should  
11 be involved in this group. We developed a broad  
12 stakeholder list, and it kept growing and growing. We  
13 wanted to develop the base resource information. So when  
14 I say this, I mean how much sun shines on X parcel of  
15 land, how much wind blows; the raw resource information.

16           Then we went about trying to define what kind of  
17 constraints are in different areas of Arizona that would  
18 need to be overlaid on top of our resource information.  
19 And then, again, we're providing this information when  
20 we're done to the RTTF, and they're going to funnel it to  
21 the electric utilities.

22           We have had six meetings to date. We started  
23 meeting, I think, February 5, and we've met every two  
24 weeks. As I mentioned, we were web cast. We have been  
25 collecting GIS information from a whole host of sources:

1 BLM, Game & Fish, Fish & Wildlife Service. A number of  
2 different federal and state agencies have all provided us  
3 their GIS information. GIS is really high quality  
4 information. We feel that it's really the best that's out  
5 there, and it's very up to date.

6 We also for the resource information, we relied  
7 upon the National Renewable Energy Lab for solar and wind,  
8 biomass, geothermal resource information. And it's really  
9 the gold standard for when it comes to the resource  
10 information, so that's what we utilized. So we have our  
11 base resource information. What's the solar, wind  
12 characteristics. We asked the agencies, federal and  
13 state, to provide us what were their constraints.

14 And then we tried to figure out, how do we go  
15 forward and categorize all of that information to have it  
16 make sense in a mapping exercise? So you see four types  
17 of processes up there. We've got exclusion, high,  
18 moderate, and low, and they talk about sensitivities. If  
19 we talk about our exclusion layers, what we mean there is  
20 that an area of land would be excluded for development by  
21 either a federal or state requirement or law. So the  
22 Grand Canyon is not going to be on the map to be able to  
23 be developed, national wilderness areas are not going to  
24 be on the map to be developed, things that are totally  
25 excluded from possible development.



1           The categories high, moderate, and low relate to  
2 the permitability of a resource area and the potential for  
3 conflict. So if you take an example of a high sensitivity  
4 area, that may be where there are multiple species that  
5 are maybe of concern to the Game & Fish or another agency.  
6 It may be where there's Native American interests or some  
7 kind of other -- what do you call it -- item where you  
8 might not be able to develop.

9           We're speaking about permitting risk. You can  
10 probably go there if you want to, but in the permitting  
11 process it might take you a lot longer; it might cost you  
12 a lot more. So what we're trying to do is build a map  
13 that indicates what is the likelihood that you can build a  
14 renewable generation source.

15           And I should mention that for this part of the  
16 effort so far, we've been looking at where can you build a  
17 renewable generator. We are not talking about where can  
18 transmission lines go. That will come in the second part  
19 of the process.

20           So high, moderate, and low as far as the  
21 development criteria. That is what you'll see in some  
22 mapping that's coming up, coming up right now.

23           MR. BERNOSKY: That's right.

24           MS. ORMOND: So I'm going to throw it over to  
25 Greg to talk a little bit more about the planning.

1           APS, I have to give them a plug. They provided a  
2 tremendous amount of resources and staffing to the ARRTIS  
3 process. They made sure that everything was webcast.  
4 They've been collecting all of the data and working with  
5 EPG to make sure that they can collect and assimilate all  
6 of the information. So Greg.

7           MR. BERNOSKY: Thank you, Amanda. And I want to  
8 echo the thanks to the folks that have participated in the  
9 ARRTIS process and who are represented here today. We  
10 wouldn't have been able to compile the information that  
11 we've been able to use for our analysis without the  
12 support and input of folks like the BLM, Game & Fish  
13 Department, Fish & Wildlife Service, and other agencies.

14           And really, what we did was try to take the  
15 information that you guys have all been living with and  
16 developing over years and put it together in a way that  
17 helps us make some collaborative decisions going forward  
18 about transmission.

19           Maybe as a follow-on to Rob's very good  
20 presentation on the alphabet soup that exists out there  
21 for acronyms and otherwise, really, all of those  
22 organizations and a big, main charge of the ARRTIS effort  
23 is to get down to two letters, connecting A to B. And you  
24 can't do that without taking a look at what the impacts  
25 are on the ground to sensitive areas from a resource

1 standpoint. We have a number of unique wildlife areas,  
2 vegetative areas, just a breadth of wonderful areas in  
3 Arizona that requires that we take a look at what that  
4 means from a connectivity standpoint. So this group has  
5 been trying to incorporate that type of discussion into  
6 what we've been doing here.

7 Amanda walked through the exclusion, high,  
8 moderate, and low definitions briefly. Those were terms  
9 and definitions that we discussed with the ARRTIS group  
10 and got to some general support for how they're defined,  
11 how we were using them in this process.

12 What we did when we received information from  
13 land management agencies and data providers was to ask  
14 them to help us assign the appropriate categorization of  
15 resource sensitivity to their resources. We did not push  
16 back on what the designations were. We did not say that  
17 shouldn't be excluded and that should be something else.  
18 We were simply gathering that information and listing it  
19 and displaying it for discussion purposes. So our group  
20 was really charged with gathering and displaying  
21 information for use in our analysis.

22 So what I'm going to walk through are a series of  
23 maps that have been developed through some of the  
24 information provided. They don't represent any final  
25 product. They don't represent any -- or all of the

1 products that have been put together, and we're going to  
2 focus on some specific parameters just to give you a sense  
3 of where the group has been going. And after we complete  
4 that exercise, we'll talk about where we ultimately are  
5 going to wrap up some of the core activities with the  
6 ARRTIS efforts going forward.

7 And looks like we're out of sequence by one  
8 slide, so let me see if I can get our map to work here.

9 The first map on the screen here is the state of  
10 Arizona and four resource categories, resource sensitivity  
11 categories that we designated through the process. The  
12 dark purple are exclusion areas; the bright blue, which  
13 you see mostly on the map are high sensitivity areas; and  
14 to a lesser extent inside the white areas that seem to  
15 remain, we look outside of those pockets -- I'm going to  
16 use this mouse hand to kind of illustrate so that  
17 everybody can see that at the same time -- are areas where  
18 moderate and low sensitivity areas were identified.

19 Just for context, the state of Arizona is about  
20 114,000 square miles. So we are talking about a broad  
21 area that exists throughout the state. And so this map  
22 really represents the information, the compilation of data  
23 that was provided through the process and designated  
24 according to those four areas.

25 CHMN. MAYES: Could I interject a quick question?

1 Just as we go through this, and I think you may have  
2 already explained this, but when we say exclusion areas,  
3 we are talking about legal exclusions? In other words,  
4 wildlife refuges, national monuments, national parks,  
5 bombing ranges, military bases, that type of thing; is  
6 that correct?

7 MR. BERNOSKY: Chairman Mayes, that's correct.  
8 The areas by statute or regulation that are off limits to  
9 utility-scale generation type of developments. As Amanda  
10 pointed out, we did focus our discussion initially on that  
11 type of development rather than transmission. So these  
12 would not be excluded, per se, to transmission or high  
13 sensitivity to transmission. We're talking more on the  
14 renewable resource area and their ability to support  
15 generation-scale projects.

16 MS. ORMOND: Chairman, one of the layers that we  
17 got from the National Renewable Energy Lab also included  
18 things like lakes, metropolitan areas, the Grand Canyon,  
19 some of the things where you know that we aren't actually  
20 precluded by law, but you just know you wouldn't build  
21 there.

22 In our group, we've talked about the Phoenix  
23 metropolitan area. How did NREL define that? That might  
24 be something that we want to go back and do further  
25 definition on, because there's areas around the Phoenix

1 metropolitan area that want to develop renewables and --

2 CHMN. MAYES: It looks like it's excluded by this  
3 map.

4 MS. ORMOND: It possibly could be. So there's  
5 some information that we probably need to go back and do  
6 some additional work on.

7 CHMN. MAYES: And given what APS just said about,  
8 you know, their current plans for importing a lot of  
9 renewables from basically the periphery around Phoenix,  
10 that doesn't quite square with this map.

11 Okay. Well, and as we go along -- and I know you  
12 both know what my concerns are about some of the  
13 exclusions. I certainly understand legal exclusions, and  
14 I understand -- so I understand the purple. And when we  
15 get into talking about the W -- I don't know if we're  
16 going to talk about the WREZ issues that we're having,  
17 maybe not, but --

18 MS. ORMOND: No.

19 CHMN. MAYES: But maybe we will if the  
20 Commissioners decide we want to.

21 But I know that I want to talk about the blue  
22 areas. We say high sensitivity. That is not -- you know,  
23 we can still site power lines through that terrain,  
24 correct --

25 MR. BERNOSKY: That's correct. And you still

1 could site generation projects in those areas, too. What  
2 we wanted to do was just identify categorically where is  
3 there a relationship of the resource sensitivity to  
4 another area. And one of the things we wanted to make  
5 very clear to the group was none of this is, per se,  
6 taking land off of the table for development. It is just  
7 a relative ranking based on feedback provided in the  
8 process as to the relationship of those sensitivities to  
9 each other.

10 CHMN. MAYES: Because, you know, if we were to  
11 consider the blue areas to be exclusionary, if that's a  
12 word, of renewable energy transmission and renewable  
13 energy transmission projects, we might as well go home and  
14 close up this meeting right now.

15 You know, so obviously that gets to my next  
16 question, which is how much of the blue area is high  
17 sensitivity because of the Game & Fish data that went into  
18 this and/or the BLM data that went in?

19 I know BLM has a slightly more, shall we say,  
20 flexible way of categorizing their data than Game & Fish  
21 did. And I understand, you know, Game & Fish's system.  
22 It turns out our Game & Fish Department is perhaps the  
23 most data-ready of any in the entire west, which in a  
24 sense may be working against us as we're trying to plot  
25 out these zones, when a lot of other states have no data

1 going into their mapping process. So we have like almost  
2 too much data as I investigate the situation with these  
3 zones.

4 But how much of the blue is caused by the Game &  
5 Fish data in here?

6 MR. BERNOSKY: In a very relative way, Chairman  
7 Mayes, I could answer that question. Maybe I could do  
8 that in the context of an upcoming slide when we isolate  
9 the exclusion and the high sensitivity areas.

10 COM. NEWMAN: I have a question.

11 MS. ORMOND: One of the questions -- sorry --  
12 that I wanted to make sure is clear is that this  
13 information is not intended to be published and utilized  
14 besides providing it to the electric utilities for their  
15 transmission planning. And there's huge sensitivities out  
16 there from the development community, both in the Western  
17 Renewable Energy Zone project.

18 And here, to say if you put a map out there and  
19 you say it's high sensitive or you say it's avoid, that  
20 means that you can't go there, and that has all kinds of  
21 implications. So I want to make it as clear as we can to  
22 say this is informational for the electric utilities at  
23 this point.

24 COM. NEWMAN: Madam Chair, I had a comment about  
25 this map that I was privy to see last week as well,



1 particularly with regard to the Game & Fish issue. I'm  
2 just going to tell a little colloquial story.

3 I understand why Game & Fish would be -- I'm  
4 probably -- I don't know. I'm very much an  
5 environmentalist. I luckily got elected to this position,  
6 and I'm very sensitive to environmental issues. However,  
7 if we don't deal with climate change issues and develop  
8 renewable energy in the state of Arizona, according to  
9 certain -- the most recent news reports, we won't have any  
10 species left, and certain endangered species will be more  
11 endangered. So I look forward to my colloquy with the  
12 Game & Fish with regard to the blue areas of this map,  
13 because I think it's antithetical to the goals of trying  
14 to protect some of the endangered species. That's just my  
15 comment.

16 Now, with regard to the purple areas which are  
17 federal areas, and I see in Cochise County, which is where  
18 I hail from, which is that huge square in the southeast  
19 corner of the state, there are hardly any places to build  
20 on renewables where the population would like to build on  
21 renewables.

22 Are you saying those white areas in Cochise  
23 County are the only places on this map where you could  
24 build renewables under this -- under these guidelines as  
25 they presently exist?

1 MS. ORMOND: Commissioner Newman, no, that's not  
2 what we're saying at all. Again, and I can read you --  
3 let me read you what the definition of, say, high  
4 sensitive is. It's areas that are classified where --  
5 hold on. My arms aren't long enough -- where there is a  
6 presence of unique, highly valued, complex or legally  
7 protected resources. Constraints could be reduced, but  
8 are not likely to be resolved through implementation of  
9 design or mitigation measures. Areas of high  
10 environmental constraint typically represent potential  
11 conflict and a high level of risk for permitting  
12 utility-scale generation facilities.

13 So I know that sounds legalese, but even on the  
14 highest bar it doesn't say you can't. It says that you're  
15 going to have a high permitting risk. And I think that's  
16 a reasonable assumption that when there's lots of  
17 different species issues out there, it's going to be more  
18 difficult to build and it may be more costly.

19 I think one of the exercises here is that we want  
20 to find the best renewable energy development areas which  
21 will have the least amount of conflict, because that will  
22 translate to lesser cost resources coming out, which for  
23 ratepayers is a good thing. So this map is meant to be  
24 indicative, not -- whatever the word is -- permanent.

25 COM. NEWMAN: I know. I just was -- and I

1 received the map last week. And I actually think that we  
2 need to have some fairly high-level discussions with Game  
3 & Fish about what ultimate goals are. I mean, this is  
4 a -- it's very alarming to me that they would blue out the  
5 entire state, and that's alarming to me.

6 And again, I mean what I say. This industry that  
7 we're trying to create here is trying to save the planet,  
8 so where do you draw that line, and how many Game & Fish  
9 commissioners can we put in the state of Arizona to guard  
10 these animals? And I'm the most environmentally green  
11 person, I think, that's been elected to this panel in 18,  
12 20 years, and so I'm saying that with all due regard.

13 Now, I can understand the purple areas when you  
14 say -- western Cochise County, I see some areas in the  
15 Chiricahuas there, not all of the Chiricahuas. I mean,  
16 those are very sensitive Native American areas, and I  
17 certainly understand that. But there are some wind  
18 projects that could be done in some of those areas on both  
19 sides of the Chiricahua Mountains where the winds kind of  
20 come down the scale.

21 And so this is a map that just needs to be  
22 discussed. And I know that you're doing the best you can  
23 and getting input from the agencies that -- the federal  
24 agencies and the state agencies you need to deal with, but  
25 someone is going to have to provide leadership here to

1 have to -- if it has to come from the Commission or --  
2 come from the Commission, the governor's office is  
3 certainly going to need to be involved in this dialogue,  
4 too. Because if this map were taken for its legalese and  
5 color, it would be a potential death knell. And it's -- I  
6 was astounded to see the map when I first saw it. That's  
7 just my public comment.

8 MS. ORMOND: Chairman, Commissioner, I think that  
9 when you look at where we are, what we're trying to  
10 accomplish is a very difficult thing. We are putting  
11 development interests on the same map as we're trying to  
12 put conservation issues, and that has never been done  
13 before.

14 I mean, I have participated in the Western REZ  
15 since June of last year, and we have had issue after  
16 issue, because what we're trying to do is fundamentally  
17 very difficult. I think it's going to be useful in the  
18 end product, but it's not without its growing pains.

19 And we're talking real dollars here. One of the  
20 things that has happened recently is that with Senator  
21 Reid picking up some of the Western Renewable Energy Zones  
22 issues in his legislation has changed the dynamics from  
23 these maps -- not these, but the western regional maps  
24 from being informative to possibly being -- having  
25 financial implications. So we have to be very careful how

1 we go forward to make sure that we don't have unintended  
2 consequences.

3 CHMN. MAYES: And I would agree, Amanda. And let  
4 me ask you on that point a couple of questions.

5 Obviously, it's up to -- it will ultimately be up  
6 to the Commissioners how to treat this data and how to --  
7 which maps to accept, which maps to adopt, if we adopt  
8 anything.

9 My question is how will the working group, your  
10 working group going forward in the coming months, decide  
11 whether to use Game & Fish's data? Have you decided to  
12 use Game & Fish's data?

13 And can maps be drawn that use Game & Fish's data  
14 and that don't use it, use -- or that use BLM's data  
15 rather than Game & Fish's data, and is that what we're  
16 looking at? I mean, how does that compare to what we're  
17 looking at?

18 Because I certainly agree with Commissioner  
19 Newman about the problematic nature of even what we're  
20 looking at, but it's better than the WREZ map which blacks  
21 out the entire state of Arizona.

22 I mean, literally, folks, this is -- for the  
23 record, I'm showing the map that was drawn by the WREZ  
24 process, which is a big, you know, red blob over the state  
25 of Arizona, which is just totally unacceptable.

1           So how are we going to decide -- how will you  
2 decide what to use?

3           MS. ORMOND: I like that, "how will you decide."  
4 You know, this is a group process.

5           CHMN. MAYES: How will the group decide?

6           MS. ORMOND: Right. I think one of the things  
7 that we have to keep stepping back to is that the BTA  
8 order was issued to the electric utilities. And so all of  
9 this information is being collected and is going to be  
10 given back to the electric utilities for them to go  
11 forward to put together their proposals on the top three  
12 transmission lines.

13          CHMN. MAYES: To the Commissioners.

14          MS. ORMOND: To the Commissioners, correct.

15          But this information is all being prepared under  
16 the Renewable Transmission Task Force, which is under the  
17 Southwest Area Transmission organization. So the  
18 information that's being prepared will be given to the  
19 utilities, but it is a product, or we are a subgroup of  
20 SWAT, which is really an appropriate place for this  
21 information to live. Because if it's going to help inform  
22 transmission planning, that makes sense.

23          I don't know how to answer your question at this  
24 point about what --

25          CHMN. MAYES: Well, are you suggesting that SWAT

1 will decide -- make decisions about what you -- because  
2 you exist because of a Commission order, not because of a  
3 SWAT order. And this goes to an issue that I have had for  
4 a while. I mean, I understand it's being adopted by SWAT,  
5 but it is not controlled by SWAT. It is the result of a  
6 Commission order and your results will come -- of your  
7 working group and of Mr. Wray's working group will be used  
8 by the utilities to make recommendations to the Commission  
9 about the top three necessary transmission lines in  
10 Arizona and the financing mechanism to get them built.

11 MS. ORMOND: Right.

12 CHMN. MAYES: So if we're making our decisions  
13 about that based on this, I mean, I don't know where the  
14 hell the lines are going to go, honestly.

15 MS. ORMOND: Right.

16 CHMN. MAYES: I don't know how the utilities get  
17 that done, to Commissioner Newman's point. And to your  
18 point, you know, we've built a lot of transmission in the  
19 state of Arizona. And I'm pretty sure 90 percent of it  
20 went through the blue areas on this line. I mean, you say  
21 high risk or high permitting risk. Well, how the heck did  
22 we do it before?

23 MS. ORMOND: Right. Madam Chairman --

24 CHMN. MAYES: You know --

25 MS. ORMOND: -- I understand your frustration.

1 We're getting it from a lot of different areas these days.

2           The map that you're looking at is related to  
3 generation. It's not related to transmission. So we're  
4 not trying to indicate where transmission can or cannot  
5 go. And it's difficult for me to answer the question  
6 about what happens with some of this mapping and maps,  
7 because those decisions haven't been made. And that's  
8 part of the reason to do this public workshop is to figure  
9 out what should be done with this. The states of  
10 Colorado, Utah, Nevada, have all done state processes with  
11 different names. California has done an incredibly  
12 extensive process, but they had a little different  
13 question they were asking.

14           So we need to figure that out. What should we do  
15 with this information? We've got a packed room of people  
16 that all have an opinion on that, and I think that we need  
17 to be able to hear from them.

18           We exist under the SWAT because that's the  
19 structure under which we were working, and I think it's  
20 been useful and working so far, but those questions we  
21 don't know.

22           Greg and I have had some conversations with the  
23 State Land Department about this. Is it beneficial for  
24 them to take some of this information and keep it? I  
25 don't know the answer to your question at this point, and



1 that's part of the reason that we're here today.

2 MR. BERNOSKY: Chairman Mayes, if I could answer  
3 a question that you raised just a minute ago as well in  
4 terms of the scenarios of how we evaluate information, or  
5 the utilities evaluate this information.

6 We have actually posed that question to the  
7 ARRTIS group and said, if we use these four categories of  
8 exclusion, high, moderate and low, one scenario that we  
9 could take forward is to say, well, let's assume that  
10 everything high, moderate, and low is developable, and  
11 just take the exclusion areas off the table. And that  
12 gives you certainly one different scenario than if you add  
13 them all together, or even if you add the high sensitivity  
14 areas in.

15 I think what you'll find is there is still a  
16 considerable amount of square mileage left to work with.  
17 The zone identification process certainly becomes a little  
18 bit more cryptic because of the isolated areas and parcels  
19 that are defined here. But we have posed that question to  
20 the group, and I think we're still looking to kind of  
21 finalize that approach with the group.

22 CHMN. MAYES: Right. And I think it would seem,  
23 from my standpoint, that you would want to have at the  
24 very least that sort of differentiation. Let's show a map  
25 that has true exclusion zones, because this is not an

1 exclusionary map. This is, you know, a map that shows  
2 legal exclusions, which is sort of what I was thinking of  
3 when I wrote my amendment.

4 MS. ORMOND: We'll show you that map next. The  
5 next map is just the exclusion areas by law and policy.

6 MR. BERNOSKY: You foreshadowed our presentation  
7 here.

8 CHMN. MAYES: Great. I should have looked ahead.

9 MR. BERNOSKY: So what we've shown on the screen  
10 now are the purple areas of exclusion from the previous  
11 map. I'm going to go back there just for one second  
12 because it's going to look a little broader than it is  
13 right now.

14 You can see that there's -- this map represents  
15 the environmental resource and data layers that were  
16 provided to us by the agencies that have contributed  
17 information to the process. And so that represents, for  
18 example, in the purple, military bombing ranges, the Kofa  
19 National Wildlife Refuge, the Grand Canyon National  
20 Monument, just as examples. You see a lot more purple  
21 here, because we've added to this discussion the concept  
22 of slope. Because, obviously, you're not going to develop  
23 on every inch of land in the state because of terrain  
24 considerations.

25 For the purposes of solar zone or finding and

1 identification, the group has to date talked about a  
2 5 percent slope. Areas that are greater than 5 percent  
3 slope are excluded from development, again, just to help  
4 refine where are the more suitable land areas based on  
5 that parameter, added to those resource sensitivities from  
6 the previous map.

7 MS. ORMOND: If I can jump in, you can build  
8 photovoltaics anywhere. I mean, you can build them on the  
9 slopes. And we heard in our committee that sometimes with  
10 some of the power towers that if you have the right,  
11 correctly-facing slope, that actually can aid in  
12 construction costs.

13 But why we choose the 5 percent is, we said, is  
14 we're trying to find where the best development areas are  
15 that will produce the lowest cost renewable energy  
16 resources. So again, it's not that you couldn't go build  
17 there, it's that we're trying to find the best.

18 MR. BERNOSKY: And, obviously, this represents  
19 significantly less amount of area that is, you know,  
20 quote/unquote, off the table for development.

21 And actually, if you were to thumbnail the amount  
22 of area, I mentioned 114,000 square miles that the state  
23 occupies, the application of this exclusion layer leaves  
24 approximately 62,000 square miles of land that is  
25 developable in this scenario.

1 COM. NEWMAN: Madam Chair?

2 Could you take this map and map on top of it in a  
3 different color where the private industry and some other  
4 folks have deemed to be renewable energy zones, sweet-spot  
5 zones, if you will? Do you have that map?

6 MR. BERNOSKY: You really are foreshadowing our  
7 presentation today. A couple of slides ahead we're going  
8 to show a schematic of where the interconnection requests  
9 have been coming in throughout the state. That's not  
10 overlaid, per se, on this data information. That's  
11 something that we're going to be working to do as our  
12 group continues its activity, but we can show you a  
13 relationship of where those queue requests are.

14 COM. NEWMAN: Thank you.

15 MR. BERNOSKY: Sure.

16 So what we wanted to do was just show the -- the  
17 next graphic here is if we were to then turn on the high  
18 sensitivity areas again, in addition to those exclusion  
19 areas that I identified in the last map, so that we have a  
20 composite of exclusion and high sensitivity areas  
21 illustrated with that 5 percent slope designation.

22 So again, the purple would represent the excluded  
23 area, the blue, high sensitivity area, and the white would  
24 be other areas that fell within either a moderate, low, or  
25 unclassified designation. In that scenario, there are

1 approximately 8,000 square miles that are occupied by the  
2 white areas on this particular map.

3 CHMN. MAYES: Greg, do you have for the  
4 previous -- for the record, Commissioner Kennedy has  
5 joined the bench.

6 For the previous map and this map, do you have  
7 the total -- the WREZ calculated that Arizona has -- this  
8 was recently put out, I assume I can say this publicly --  
9 information stating that Arizona has something in the  
10 range of -- well, 20,218 megawatts of potential solar  
11 development; is that correct, Amanda?

12 MS. ORMOND: In what we've identified as the  
13 qualified resource areas. That's certainly not  
14 everywhere. That's in the drilled down of what we've  
15 identified.

16 CHMN. MAYES: In the qualified resource areas.  
17 But when WREZ took off the Game & Fish data and the  
18 exclusions zones it took it all the way down to 2,000  
19 megawatts, and the Commissioners discussed this.

20 COM. NEWMAN: Ouch.

21 CHMN. MAYES: Yeah. The Commissioners discussed  
22 this in our last Staff meeting. It was devastating.  
23 That's what I showed here, this red blob.

24 So do you have similar megawatt figures for these  
25 two maps in terms of under the -- not this one but the

1 previous one, how many megawatts of available solar and  
2 wind and geothermal are there in the developable areas  
3 under these two maps?

4 MR. BERNOSKY: I went back to the exclusion map  
5 just to start the response to your question.

6 There's a lot of technologies that are out there  
7 that are being explored that have different, you know,  
8 capabilities. And for the purposes of discussion in the  
9 ARRTIS group, and to respond to your question, we have  
10 seen that roughly a one-square-mile area translates to one  
11 megawatt of generation potential.

12 MS. ORMOND: 100.

13 MR. BERNOSKY: Sorry. 100 megawatts. Sorry.  
14 Correct that.

15 So doing the math, we have 62,000 square miles in  
16 this particular graphic of area that is not located within  
17 the excluded areas, so there's a significant amount of  
18 potential. There's a number of filters and applications  
19 that you would need to consider with that, but just within  
20 this we have 62,000 square miles of area left. So  
21 presumably there's quite a bit of megawatt developable  
22 potential in this scenario.

23 And again, going forward to even this scenario  
24 where we have applied the high sensitivity in addition to  
25 those exclusion criteria, we're still approximately

1 8,000 square miles of area that are occupied by the white  
2 areas, which translates, again, to a very high megawatt  
3 potential.

4 COM. NEWMAN: And how does that white area -- I  
5 asked you about the overlay, which I'll be patient about.  
6 How does that white area equate with the grid?

7 MR. BERNOSKY: Yeah. Actually, the existing grid  
8 and, you know, what the future grid needs, obviously, are  
9 two questions. But I think one of the things we're  
10 looking at in the group right now is we're at a point  
11 where we've really kind of got our data together. We're  
12 really just trying to understand what does it mean? How  
13 do we put our hands around it?

14 The next step is going to be overlaying the  
15 existing grid, the 10-year plan projects that are either  
16 certificated or, you know, planned to be developed in the  
17 next ten years, and then seeing where are the gaps, where  
18 are there opportunities still then to supplement what the  
19 system needs.

20 The existing system, there are quite a bit of  
21 transmission that corresponds to some of these white  
22 areas. For example, this area through here is the  
23 Interstate 8 corridor. There is an existing Palo Verde to  
24 North Gila-1, and a recently certificated Palo Verde North  
25 Gila-2 line that is in that area. This is roughly the

1 I-10 corridor. There are Devers, the Devers-1 project;  
2 obviously, ongoing discussion about the Devers-2 project.  
3 There are a number of other Western facilities that are in  
4 that area that have been the subject of some stimulus  
5 money discussion, I know, through various utility  
6 interests recently.

7 We've shown some very rough maps previously about  
8 some of the lines coming from Four Corners, Cholla, down  
9 into the Pinnacle Peak area and northern Phoenix. So  
10 there are existing substations and transmission facilities  
11 that do generally line up with a lot of these areas. So  
12 the existing system certainly has some correlation with  
13 the white areas.

14 MS. ORMOND: And if I could put a thought out  
15 there. When we think about new transmission, there's a  
16 couple of things you can think. You can think about  
17 building brand new lines to access brand new areas, you  
18 can do upgrades of lines so more capacity can flow, or,  
19 and what we're seeing, I think, is that you can also add  
20 substations. So where you previously couldn't tap into a  
21 line, now you actually create an access point. It's a  
22 really cost effective way to bring new generators on line,  
23 because you build a substation and all of a sudden you  
24 facilitate a whole new area.

25 Greg will show the interconnection queue, which



1 you are seeing now is that everybody is trying to build  
2 around the Palo Verde Hub. Why? Because there's  
3 transmission there. If you put interconnection points in  
4 other new places, now you have facilitated generation in  
5 that area.

6 COM. NEWMAN: Thank you.

7 MR. BERNOSKY: I'm just going to briefly touch on  
8 the next map, and then we can go to a graphic that gets at  
9 some of the interconnection questions that have been  
10 raised here.

11 That's that map. So this is a map showing the  
12 exclusion and high sensitivity areas with now an overlay  
13 of Arizona Department of Water Resources groundwater basin  
14 areas. And the reason that this is important, obviously,  
15 is that water is a very important issue to the state and  
16 will ultimately be a big part of the discussion as  
17 renewable and any type of generation facilities come on  
18 line over time.

19 We wanted to at least introduce this into the  
20 discussion of how we think about renewable generation  
21 planning in the future. We also needed a way to help get  
22 our hands around how do you define one zone from another  
23 when you start looking at the areas that are left in the  
24 state to define zones within.

25 So the group had decided to use this coverage as

1 a way to sort of cookie-cutter out the way we would define  
2 zones going forward, and then identify what transmission  
3 needs would be necessary to connect those areas. We  
4 haven't applied any sensitivity to the groundwater basin  
5 information we've received. We think that it's helpful  
6 that we can point back to say this particular area is  
7 located within this particular basin. And ADWR has done  
8 an exceptional job of learning and researching and  
9 documenting the issues associated with each of those  
10 basins so that we can correlate the information developed  
11 in this process to the work that they do.

12 MS. ORMOND: And one of the reasons that we --  
13 that's up on the map is because you cannot, by Arizona  
14 law, transfer water between basins. And so if you want to  
15 build a thermal plant that needs water in one area but  
16 think you're going to put a well in another area, you  
17 cannot do it. So we just thought this was informative to  
18 have out there.

19 COM. NEWMAN: I'm glad you did.

20 How does -- on the water issue, Madam Chairman,  
21 how is it different from AMA areas and non-AMA areas,  
22 which are usually in rural areas. I mean, there is  
23 groundwater supply.

24 I have talked to a lot of ranchers and landowners  
25 out there that say, well, the perennial use -- in fact,

1 this is how some of these sites are being picked. The  
2 perennial use has been growing alfalfa or growing cotton  
3 and they have grandfathered water rights, and so,  
4 therefore, you know, they should be able to use that  
5 water. It's really the same amount of water or even less  
6 than growing cotton or alfalfa.

7 How does that fit into your water analysis?

8 MS. ORMOND: Commissioner, it is an excellent  
9 point. I think one of the places that is easiest and  
10 maybe best to build is on old agricultural land that's  
11 fallow, because the -- I think the Solana plant uses seven  
12 times less water than what the agriculture of the area, or  
13 something like that. APS can correct me. But there is a  
14 significant water reduction if you go from agricultural to  
15 solar.

16 From a development perspective, it's good area to  
17 build on because typically it's already laser leveled, so  
18 there's not as many construction costs. So there are some  
19 advantages.

20 COM. NEWMAN: But then I have heard from my  
21 friends in the agra business community that have some fear  
22 with regard to losing their rich resource. You know, we  
23 may have to evolve, but that will be a big part of the  
24 debate. There's going to have to be some flexibility, I  
25 think, on behalf of some agra business interests. And

1 indeed I think that there is, but I have talked to some  
2 folks, certainly during my election campaign, who were  
3 very, very concerned that if I got on the Commission and  
4 people wanted to promote renewable energy, that it would  
5 be a real impediment to their bottom line.

6 MS. ORMOND: Commissioner, it's just another one  
7 of the issues that we need to be considering.

8 All technologies, all solar technology does not  
9 use water. And I think that what I hear from the industry  
10 folks that I represent through some clients is that  
11 technology is going to change over time. We're building  
12 these thermal plants now. They are the most proven and  
13 the most tested. There's a lot of technologies that are  
14 out there that are in development or in the application  
15 stage now that use no water whatsoever. So we need to be  
16 really cognizant of what the water use is, but it may be  
17 less of an issue in the future. It just depends on the  
18 technology.

19 COM. NEWMAN: And then there have also been  
20 improvements in dry cooling as well, which would probably  
21 even help this equation a bit in some areas where people  
22 are concerned that we're taking away too much of the water  
23 to grow crops, and that's something that we really do need  
24 to be cognizant of.

25 MS. ORMOND: Absolutely.

1 COM. NEWMAN: Not just industrial crops, but  
2 crops for feeding the United States.

3 MS. ORMOND: Right.

4 COM. NEWMAN: Especially out in the Yuma area.

5 MR. BERNOSKY: Before we leave this map, to  
6 answer your earlier question, Chairman Mayes, the  
7 application of the Game & Fish coverages in this  
8 particular scenario roughly doubles the amount of high  
9 sensitivity area that would be shown on this map and  
10 otherwise wouldn't be had it not been included.

11 So again, none of the information provided from  
12 Game & Fish, with the exception of some areas that may be  
13 because of statute or regulation, fall under exclusion.  
14 They were all generally high sensitivity with some  
15 moderate sensitivities designations associated with them.  
16 So they weren't, per se, exclusion areas that were  
17 provided, but more high sensitivity areas.

18 CHMN. MAYES: And Commissioner Newman mentioned  
19 the need to work with Game & Fish. And, you know, we have  
20 been meeting with them, and I know you have, Amanda. And  
21 I think one of the -- I appreciate the fact that we have  
22 several environmental organizations here, as well as state  
23 departments, DEQ, DWR, Game & Fish. We need to work  
24 through these issues and really cooperate with each other.

25 And in the case of Game & Fish, what I have asked

1 them is to look at, you know, the reasons that they are --  
2 the reasons for the high sensitivity and whether we can  
3 break that down and make some rankings. I mean, there's a  
4 difference -- it would seem to me there's a difference  
5 between the protection of mule deer for hunting season and  
6 the protection of the desert tortoise and trying to  
7 prevent that from sliding into an endangered species list  
8 categorization. And if we can do those types of things  
9 and work together, I think that we will have a successful  
10 process, and maybe more successful than any other state.

11 MS. ORMOND: Right. Chairman, I think as you  
12 know, I have been advocating for a process that is very  
13 broad and deep with a lot of stakeholders. That's both  
14 challenging, but hopefully the end product is that you're  
15 talking to people early and often and getting everyone in  
16 the room that has a stake in this: Agriculture, to  
17 development, to state agencies.

18 I think this process needs to continue in some  
19 type of venue to be able to have those ongoing  
20 discussions, either at the Commission or some other place,  
21 to make sure that we're getting everyone's viewpoints,  
22 because this is difficult stuff that we're trying to do.

23 CHMN. MAYES: Okay.

24 MR. BERNOSKY: The next slide gets to -- and I'm  
25 sorry. I'll have to credit Rob Kondziolka for his

1 development of this graphic from a presentation that he  
2 gave a few weeks ago.

3           This is a very high-level graphic showing the  
4 interconnection requests into Arizona utilities, including  
5 Western, through early March of this year, and if I can  
6 give you a broad explanation of what you're looking at  
7 here. Requests on the APS interconnection are shown with  
8 the yellow outline. They are broken down by solar, wind,  
9 and biomass. Interconnections to SRP's system are shown  
10 with a blue outline, solar and wind requests. In Tucson  
11 Electric's it's more of a purple outline, solar and wind.  
12 And then into Western with a red outline and, again, solar  
13 and wind from there.

14           The interesting point, not only of this, is the  
15 number of megawatts that are proposed for development in  
16 the state. But one of the steps that we want to go to as  
17 a next step with the ARRTIS group is the relationship of  
18 the interconnection locations as it relates to some of the  
19 zones that are coming out of the ARRTIS effort. And as  
20 transmission interconnections become developed, where is  
21 the relationship between where the market is going versus  
22 where the resource sensitivity and some of the other  
23 considerations show up in the state.

24           We think -- and again, this doesn't have that  
25 one-to-one overlay of some of the other maps, but there is

1 some synergy, for example, with the Gila Bend, Gila River  
2 area down in this portion of the state. There are a  
3 number of requests into the systems through that area.  
4 There is good solar potential, and there's some  
5 developability potential in that from a resource  
6 standpoint as an example. And that correlates well with  
7 what APS and other utilities are seeing as requests into  
8 our system. So we want to use this as a good cross-check  
9 to make sure that the process that we're going through is  
10 reflective of where development is anticipated at the  
11 time.

12 One more graphic. I'm going to go back, because  
13 it looks like it got out of order in this presentation.  
14 This is just kind of talking about some next steps.

15 So in terms of where ARRTIS is at and where the  
16 group will be going, we have acquired all of the resource  
17 information that we believe will be offered to the  
18 process. And again, we are working with the time frames  
19 laid out in the BTA process, and Brian Cole walked through  
20 it this morning. There are a number of subsequent steps  
21 to what ARRTIS is looking at and what the finance  
22 committee is looking at that it's useful for us to  
23 complete at least our heavy lifting by the time we get to  
24 the next couple of months so those next activities can  
25 occur.



1           We want to begin overlaying the existing and  
2 10-year planning transmission, as I mentioned previously,  
3 to get a good look at what does the system really look  
4 like in relationship to developable areas in the state.  
5 And that will then help us focus on, you know, where are  
6 some renewable resource areas.

7           The purposes of the ARRTIS effort, we have not  
8 said that defining renewable resource areas is a final end  
9 product or something that we need to have happen as an  
10 outcome of this process. Really, it is a means to an end  
11 to help utilities understand where the critical mass of  
12 renewable projects and renewable development potential can  
13 occur. So we have been less specific or in need of  
14 emphasizing definition of zones, but that's still  
15 something that our group is having ongoing discussion  
16 about as we go forward and one of the reasons we showed  
17 the groundwater basin as a filter.

18           As we just looked at on the other map there,  
19 cross-referencing the availability interconnection  
20 information will help us understand the relationship of  
21 the work that we've done to the development communities  
22 interests. And ultimately, we will refine our areas and  
23 provide that information to the Renewable Transmission  
24 Task Force for them to help with the conceptual  
25 transmission overlay so that we can get a cohesive look at

1 where the lines most strategically could be located.

2 And that concludes our presentation on ARRTIS. I  
3 just had a final comment that all of the maps and  
4 information and presentations that we've developed to date  
5 reside at WestConnect.com, and the information from this  
6 presentation will be available there as well as through  
7 docket.

8 CHMN. MAYES: And they will also be on the  
9 Arizona Corporation Commission's website.

10 MR. BERNOSKY: Yeah.

11 CHMN. MAYES: Under the -- we have an area set  
12 aside for this process, a process that began and will end  
13 here.

14 Can I just ask you, can you go back to the "next  
15 steps" slide?

16 MR. BERNOSKY: Sure.

17 CHMN. MAYES: I'm looking at the renewable energy  
18 transmission lines that were drawn by Peter Krzykos in  
19 his -- I mispronounced that. Peter K.

20 Anyway, this was the first rendition of the  
21 renewable energy zones that were drawn by the first  
22 working group, and there's seven lines that were drawn. I  
23 know it was a rough draft, but how has all of the  
24 information that you have gathered changed this schematic  
25 or, you know, how -- have you decided that these lines --

1 I mean, is the next process the process that will decide  
2 where the lines ought to go?

3 And again, you believe your process is moving in  
4 the direction that the Commission wanted, which is for  
5 three lines to be identified per utility, or jointly if  
6 the utilities decide to cope, to join up and recommend  
7 specific lines. Because that was our intention as a  
8 Commission was to have specific lines identified. And,  
9 obviously, we thought we already had the zones, but we  
10 have new environmental data coming in.

11 MR. BERNOSKY: Yeah. I would say absolutely the  
12 answer is, yes, that we are getting some more refined  
13 level of information and the ability to kind of hone in on  
14 some more level of specificity.

15 The map that you held up there shows some very  
16 gross area for solar development in the southwest part of  
17 the state, for example. But as we know, there are a  
18 number of considerations there that limit what really can  
19 be developed inside that bubble. And that has a  
20 correlating effect on what transmission lines, what  
21 substations, which facilities really are the ones that are  
22 most appropriate to serve accessing the areas that will  
23 likely be developed.

24 So if we were to just work from that gross scale,  
25 we wouldn't have as good a picture as we're developing now

1 that tells us more about where the deficiencies in the  
2 system may or may not exist.

3 MS. ORMOND: And Chairman, you know, you asked  
4 the question: What is going to happen with all of this  
5 information? That's been asked over and over again.

6 In every single meeting we've had, we have  
7 reiterated that all of this information is informative  
8 ultimately to the utilities to meet the BTA order. And a  
9 lot of this work could have been done without this whole  
10 ARRTIS committee, without involving all of the  
11 stakeholders and without talking to anybody, but we  
12 recognized that we're kind of on a collision course here,  
13 and these issues are going to come up sooner rather than  
14 later. And other states in the west have put together  
15 processes that say, let's be proactive, let's try to drive  
16 development to where we think it's best, as opposed to  
17 saying please go anywhere you want and we'll try to  
18 accommodate you later.

19 And so I think that this has been a pretty  
20 proactive step to try to say, let's get our arms around  
21 this issue. And you brought them all up. The water  
22 issues and agricultural and all of these different things  
23 that we're still going to have to work on and figure out  
24 how to deal with. And I think you can only do that with a  
25 large collaborative process.

1           And you know I have talked about it: What is the  
2 vision? Are we building just for native load for Arizona?  
3 Are we building it for the export market? That question  
4 is still out there, and I think this afternoon when we try  
5 to do some facilitated questions, we're going to try to  
6 get to that a little bit. Because the transmission  
7 picture looks significantly different or greater if you're  
8 going to build for an export market than if you are just  
9 building to serve native load.

10           CHMN. MAYES: Yeah. And I agree that's an  
11 important question to grapple with and one that ultimately  
12 the Commissioners will decide. And I have always believed  
13 that it's not either/or, it's both.

14           MS. ORMOND: Right.

15           CHMN. MAYES: But, you know, that's something  
16 that the Commissioners will tackle as a policy matter.  
17 And I agree with you. I think this has been a great  
18 process, and I really do appreciate all of the work of  
19 your committee, and looking forward to hearing from  
20 Mr. Wray about what they're up to.

21           MR. BERNOSKY: Thank you.

22           MS. ORMOND: So with that, Chairman, I'll ask  
23 what your pleasure is. We could hear from the finance  
24 committee, we could take some questions, or we could go to  
25 lunch. What is your pleasure?

1 CHMN. MAYES: I'll let you decide. Have we taken  
2 questions on your presentation yet?

3 MS. ORMOND: We have not.

4 CHMN. MAYES: Other than from the Commissioners?  
5 Okay, why don't we do that.

6 MS. ORMOND: Okay. So do we have questions?

7 MR. ROBERTSON: This is Larry Robertson posing  
8 the question.

9 Amanda, picking up on the word that you just used  
10 about an impending collision, how does the work of your  
11 group and of the WREZ impact or inform what is currently  
12 going on on the national level with regard to national  
13 electric transmission corridors, and how do you see that  
14 interplay or interface, if there is any, moving forward?

15 MS. ORMOND: Larry, could you be more specific  
16 when you say national interplay? Because there's so many  
17 things going on. You've got Western Area Power  
18 Administration who has been given bonding authority for  
19 3.25 billion, which will have impact on transmission. You  
20 have possible national renewable energy standard  
21 legislation. Is there something specific that you were  
22 thinking of?

23 MR. ROBERTSON: In posing the question I had  
24 nothing specific in mind. I have had a general awareness  
25 of various things going on, and I was really looking to

1 you and Greg to perhaps give us some context.

2 MS. ORMOND: Well, I guess the most hot button  
3 issue that you see out there is the whole -- I hate to say  
4 this word -- preemption issue. Are the feds going to try  
5 to preempt some of the states' abilities to do  
6 transmission to facilitate renewable or any other policy  
7 that they come up with? I think that that's the biggest  
8 thing that we have concern about.

9 And I think that these processes, the advantage  
10 is to get to inform ourselves so we have the best data  
11 going forward so we can say, no, we have an ongoing  
12 process. As the Chairman always mentions, Arizona has  
13 been very successful in building transmission. And so for  
14 us to be preempted really doesn't make a lot of sense,  
15 because we've been proactive in building transmission.

16 So I think there are so many pieces and parts  
17 going on in the federal arena right now that it's very,  
18 very difficult to be able to say how that's going to  
19 impact us. I think, again, we need to be working  
20 collaboratively to build what we think we need to build to  
21 meet our needs. So when those issues do come up, we can  
22 then say we're prepared; this is what we did; this is our  
23 analysis; this is our path forward.

24 MR. ROBERTSON: Thank you.

25 COM. NEWMAN: Madam Chair, to that, that's a very

1 good question. But I also see -- I agree with the  
2 Chairwoman on that we need to be looking at import and  
3 export. So that relates to the federal question as well.  
4 And so -- but that's going to be a decision of the  
5 Commission. So you have two Commissioners saying we're  
6 looking at import and export.

7 And I think it's very important that this process  
8 continue, absolutely continue with the participation of  
9 everyone in here, because it gives us much more  
10 information to dialogue with FERC and other entities that  
11 are going to be involved, very much involved from a  
12 national standpoint after this national legislation comes  
13 through with whatever it will be for backstop authority,  
14 if it will be that.

15 But the more planning that we have, the better it  
16 will be. That's why I was sort of so upset about sort of,  
17 you know, a black and blue chart over the whole state of  
18 Arizona, when I know that the entire United States is  
19 looking to Arizona to be a major provider of solar energy  
20 for the United States.

21 So we're going to do this as cooperatively as we  
22 can. I sort of have a different take on national and  
23 state relations, but this needs to be -- you know, I see  
24 us working cooperatively, to use the word cooperative  
25 federalism.



1           So we need to be in Washington talking with the  
2 people who are going to be writing this legislation, and  
3 we need to be in interaction with the FERC Commissioners,  
4 and we need to be in interaction with all of the south-  
5 western states that are trying to, you know, hook up with  
6 the rest of the country to get this clean renewable energy  
7 out to other states besides just for internal use.

8           My vision is that we can change the whole culture  
9 of Arizona's energy system. Instead of spending  
10 \$8 billion paying other states for fuel, if we can cut  
11 that in half and be -- you know, that expenditure, cut  
12 that in half and be a net exporter, we'll be doing a lot  
13 for our customers in Arizona.

14           So I see this all as a very long process. I  
15 thank you, Amanda, and all of the participants for being  
16 involved in it. I come in a couple of years after it was  
17 started, but this is really where the rubber meets the  
18 road. We need to figure out where our renewable energy  
19 hot spots are and how to get this not only to our markets  
20 but to other markets.

21           CHMN. MAYES: I would add that this meeting today  
22 and all of the people sitting here are Exhibit A in the  
23 argument against federalization of line siting in this  
24 country. Under the federal legislation currently being  
25 considered by Reid and Bingaman, each one of us would have

1 to get on an airplane and fly to FERC to make these  
2 arguments. So good luck with that for all of us. And  
3 that's why I will be lobbying next week in Congress  
4 against both of those bills. But in any case --

5 COM. NEWMAN: But they still might make it  
6 through.

7 CHMN. MAYES: I think that's very true, and I  
8 think that would be unfortunate. But in the meantime, we  
9 have this process going on. And frankly, given how fast  
10 the federal government works, I would suspect that we're  
11 going to build some renewable energy transmission through  
12 this process long before they get the rules written for  
13 their process.

14 COM. NEWMAN: God willing.

15 CHMN. MAYES: Amanda, do we have other questions?  
16 Tom?

17 MR. WRAY: Yeah. Tom Wray from the committee  
18 with no name that everybody wants to hear from. Just a  
19 point, not a question. But Greg and I talked about this  
20 when he was assembling some of this material for today.

21 Keep in mind that with 14 percent of the land in  
22 the state of Arizona being private, there's very little  
23 you can do on a linear action without triggering NEPA,  
24 (A). (B) The only land across which you cannot propose a  
25 linear action such as a transmission line in absolute

1 terms would be land that is set aside by Congress. And we  
2 know those to be typically wilderness areas and national  
3 parks, specifically.

4 The other thing to keep in mind is that in the  
5 course of advertising your notice of intent, the Register,  
6 if you properly draft your proposed action under NEPA, you  
7 will place every federal agency that has a resource  
8 management plan that might otherwise interfere with your  
9 proposal on notice that your process itself might cause  
10 their resource management plans to be revised.

11 So the NEPA process not only opens up the  
12 opportunity for the proposed action to be placed, but also  
13 to correct and adjust and revise resource management plans  
14 that on the surface, based on these sort of maps you're  
15 seeing up here, are blocking your intentions.

16 And with that I would pray to the dais that we  
17 break for lunch.

18 MS. ORMOND: Are there other questions before we  
19 break for lunch?

20 (No response.)

21 MS. ORMOND: We haven't had many opportunities  
22 for questions. So come back in an hour?

23 CHMN. MAYES: Sounds good.

24 MS. ORMOND: 1:35. And we'll hear on the finance  
25 subcommittee next. Thank you, everybody.

1 (A recess was taken from 12:35 p.m. to 1:42 p.m.)

2 MS. ORMOND: So folks, we're going to go ahead  
3 and get started again. I don't know if we're going to  
4 have as many people after lunch as we had before lunch,  
5 but I would encourage you, if you're interested, please  
6 join us at the table up here if you're a presenter or if  
7 you want a better seat. There are seats against the wall.  
8 We really had a hard time fitting everyone in today. We  
9 would like to stay within the fire code.

10 We're going to start with Ed Beck this afternoon,  
11 and Ed is going to talk to us a little bit about  
12 regulatory processes that are used in traditional  
13 transmission development, correct?

14 MR. BECK: That's correct.

15 MS. ORMOND: Okay.

16 MR. BECK: Good afternoon. Again, my name is Ed  
17 Beck. I'm director of line siting for Tucson Electric  
18 Power.

19 I wanted to give a little bit of an overview of  
20 the sitting process that's used in Arizona, then a little  
21 bit of information on state siting authorities, which is  
22 one possible avenue to help finance projects, and then  
23 touch upon something we've already heard a little bit  
24 about this morning, which was the federal siting issue.

25 Now, first of all, I apologize this is a lot of

1 information on these slides, so it is hard to read. But  
2 basically what I wanted to do was identify six stages of  
3 siting that pretty much are used by the utilities in  
4 Arizona. We try to have a very open, transparent and  
5 public process as we go through a line siting case. This  
6 also applies to generation, but really I'm speaking to the  
7 transmission issue.

8           The first stage is really identification of the  
9 project, and we typically will define some siting criteria  
10 that are used or that will be used for analysis during the  
11 process. We define the study area and we start to collect  
12 some data.

13           We usually get out and inform the jurisdictions  
14 about the project and that it will be coming. We try, and  
15 specific to TEP, but I think this is generally applicable  
16 to all of the utilities in the state, we'll try and  
17 identify a group of stakeholders that we can use as a  
18 sounding board as we go through our public process. We'll  
19 develop either a project fact sheet and/or a newsletter to  
20 send out to the public in the study area that we're  
21 working with. And typically, at a minimum, you're talking  
22 a couple of months just to kind of get the project kicked  
23 off.

24           Then we go into our next stage, which is we start  
25 to identify opportunities and constraints for our project.

1 Typically, for transmission lines, we're looking for  
2 linear features, whether it be a roadway, an existing  
3 transmission line, canal, railroad that type of thing.  
4 And that's all done as part of the study process within  
5 the study area that we've defined.

6           Again, we'll send out potentially another  
7 newsletter, but then this is where we start our public  
8 open houses and we will actually get the public involved  
9 in the process. We'll look for input on the routing, on  
10 any hotspots that we should be looking for, and also  
11 anything we may have missed as we're going through the  
12 study area process, if there's something that the public  
13 knows about that we've missed in our identification of  
14 existing land uses and so on.

15           Then we'll move into our next stage, which is a  
16 more detailed inventory and alternatives assessment.  
17 These things are all pretty much ongoing. There's not a  
18 clearly defined breakpoint between the stages, but this  
19 was just intended to kind of give you an idea of the  
20 process.

21           Then, again, we go into stage four where we  
22 actually put alternatives on the maps and we're finalizing  
23 alternatives, coming up with either preferred options, if  
24 we have a preferred option, or the primary alternatives  
25 that will be taken forward in the siting process.

1           Again, we'll have more public open houses,  
2 another newsletter, get more feedback from the public.

3           Then we go into stage five, which is actual  
4 preparation of and filing of an application for  
5 Certificate of Environmental Compatibility that goes into  
6 the ACC. In Arizona, anything 100kV and above has to be  
7 sited by the Corporation Commission. They use their  
8 committee, the Line Siting Committee, to hold their  
9 initial hearings and go through the process. The Line  
10 Siting Committee will then make a recommendation to the  
11 Commission who will then act upon that application. So in  
12 stage five, we put the application together and actually  
13 submit it to the Commission.

14           And typically, stage one through stage five,  
15 probably very best scenario, minimum time is six months in  
16 the public process leading up to an application. But  
17 that's on a very streamlined process with a project that  
18 maybe is not hopefully very controversial. It can go up  
19 into a number of years for public process on more  
20 controversial projects before we actually get to the  
21 application.

22           In stage six we've made application to the state,  
23 and then the Commission, the siting committee, will hold  
24 its hearings. And that typically can take up to six  
25 months. It can take longer. The goal of the Commission

1 is to try and get that process done in six months.

2           So that's just a very basic outline of the  
3 process used for a transmission line. So at a minimum,  
4 you are really looking at a year process when you start to  
5 think about a project to where you could actually have  
6 permission to build it. More likely you're talking a  
7 year-and-a-half to two years, and in some very  
8 controversial projects probably several years process. So  
9 as we heard this morning, transmission takes a long time  
10 to get in place before generation project can actually use  
11 that transmission line.

12           Next, I would like to talk a little bit about  
13 state transmission siting authorities. I'll touch on  
14 three that exist in the west that potentially impact  
15 Arizona. Typically, these authorities were enacted to  
16 help facilitate, enable or even possibly finance new  
17 transmission facilities, and in some cases generation.  
18 The entities do not rely on the full faith and credit of  
19 the state when they issue bonds, to the extent they can  
20 issue bonds, so they are standing on their own.

21           Their goals typically are to advance the  
22 transmission development, and in some cases they do look  
23 at generation projects. They serve a coordinating  
24 function, and the goal is to really be the incubators and  
25 catalysts for getting projects built. And to a large



1 degree they're formed to take extensive in-state resources  
2 and either send them in some cases out of state, or for  
3 internal development.

4           The first one that was created in the west was  
5 the Wyoming Infrastructure Authority. It was created in  
6 June of 2004. And on the board you'll see their mission  
7 is to diversify and expand the state's economy by  
8 facilitating the planning, financing, building,  
9 maintaining and operating of interstate electric  
10 transmission projects and corresponding generation,  
11 including wind, natural gas and coal resources for sale to  
12 load centers in the west.

13           The Western authority can construct. They can  
14 obtain, own, and operate any eligible facilities. And  
15 they can also issue bonds at their discretion through  
16 resolutions of their boards.

17           You'll see a list of five projects the Wyoming  
18 Infrastructure Authority has actually been involved in and  
19 or furthered their process. You can see that in 2005,  
20 they financed three-quarters of a used transmission  
21 project. It was a 130-mile 230 line. They held the open  
22 season to allocate transmission capacity in the Wyoming to  
23 Colorado intertie. They partnered with Trans-Elect and  
24 Western Area Power to develop the Wyoming-Colorado  
25 intertie section. They currently own a 10 percent stake

1 in the TransWest project, which is a project proposed for  
2 development from Wyoming down into the Arizona area. And  
3 they are also currently working with the High Plains  
4 Express project, which is a project from Wyoming down  
5 through Colorado and into New Mexico. So they've actually  
6 been pretty active in transmission development.

7 The next entity that was created was the New  
8 Mexico Renewable Energy Transmission Authority. Again,  
9 these are all of these acronyms as Rob had mentioned this  
10 morning. They're all over the place, and these  
11 authorities also created their own acronyms.

12 You'll see their mission: Focus on electric  
13 system transmission infrastructure planning, financing,  
14 and implementation -- a little bit of a difference here --  
15 primarily for the purpose of developing and marketing  
16 renewable energy resources to external markets.

17 The intent was to make New Mexico the renewable  
18 energy resource for the west.

19 They can own facilities as long as they're leased  
20 to other entities. They're expected to source at least  
21 30 percent of their energy on their lines from renewables.  
22 Again, they can issue bonds at their own discretion, and  
23 currently they're working with the High Plains Express  
24 project. That's about the only claim to fame they have  
25 right now.

1 CHMN. MAYES: To that point, Ed, I was going to  
2 ask you, RETA hasn't actually triggered its bonding  
3 capacity or authority yet, and they haven't done anything,  
4 have they?

5 MR. BECK: That's correct. To my knowledge, they  
6 have not bonded anything yet.

7 CHMN. MAYES: Okay.

8 MR. BECK: The next one that was developed was  
9 the Colorado Clean Energy Development Authority, or CEDA.  
10 It was created in May of 2007. Again, this one was to  
11 help facilitate development of renewable energy and  
12 transmission projects in Colorado in a timely manner.  
13 They can only engage in clean energy projects. But in  
14 addition to transmission, they can finance generation,  
15 transportation, storage, and equipment manufacturing  
16 facilities related to clean energy.

17 It's a financing authority only. It cannot own  
18 or operate any facilities. And it has preauthorized  
19 approval to issue up to 40 million in bonds annually for  
20 transmission for wind projects, and up to 25 million in  
21 bonds annually for solar projects.

22 Again, they are working with the High Plains  
23 Express project, and that seems to be their only claim to  
24 fame right now.

25 Another model that is out there is -- I labeled

1 it the Tehachapi project model. I think it may also be  
2 called the trunk line model within the CAISO, the  
3 California ISO. The Tehachapi project was basically a  
4 renewable -- transmission to bring renewables out of wind  
5 areas primarily in California into the load centers in  
6 California. The way it was funded is the costs of all of  
7 the transmission-related projects are initially socialized  
8 through the CAL-ISO, and they are paid for by all CAL-ISO  
9 users, with the idea that as interconnects come on board,  
10 renewable energy or whatever energy comes on board, they  
11 will start paying for those facilities in the future.

12 It might be a good model, but the federal  
13 regulatory risk associated with that for interstate, it's  
14 an unknown at this point. Would FERC approve a similar  
15 financing mechanism across state boundaries?

16 In this case, it was an in-state project with the  
17 benefits strictly going to CAL-ISO users.

18 And relative to the federal regulatory issues, to  
19 leave this out it wouldn't have been good, but we have  
20 already heard just briefly about it today. There's the  
21 Harry Reid bill that talks about giving FERC authority to  
22 site transmission lines related to renewable energy zones.  
23 So it's a somewhat limited bill as opposed to the Bingaman  
24 bill, which would provide FERC oversight and transmission  
25 siting for all transmission being constructed. Those are

1 two things that are on the horizon that are going to be a  
2 very interesting subject as we move forward.

3 And that was my overview of regulatory.

4 MS. ORMOND: Questions?

5 MR. CHARTERS: In the first part when you're  
6 talking about stages --

7 MS. ORMOND: Jim, you need to state your name.

8 MR. CHARTERS: Jim Charters, Western States  
9 Energy. When you first -- Western States Energy  
10 Solutions.

11 When you first go through the first parts of the  
12 stages, if you're doing a NEPA process, are you doing that  
13 before you go to the CEC process?

14 MR. BECK: It's an interesting question. It  
15 depends on really the project. Tucson Electric Power in  
16 particular has had a case where we have come forward with  
17 a project not having NEPA completed. It was an issue  
18 during our hearings. The siting committee and,  
19 ultimately, the Commission approved the project, and then  
20 when we got the actual, final NEPA results, it did not  
21 coincide with what the Commission had approved.

22 The problem we had was a federal issue. Giving  
23 the feds authority to site, I'm not sure whether that's  
24 the right answer or not, but definitely TEP has had a  
25 better answer with the Commission than we have at the

1 federal level. But there are cases where ideally you  
2 would have the NEPA process underway, if not completed,  
3 when you make application.

4 MR. CHARTERS: Thank you.

5 MS. ORMOND: Other questions?

6 MR. GORSEIGNER: Thank you. Eric Gorseigner with  
7 the Sonoran Institute. On the bonding, what is the  
8 revenue source used to return the bonds, and how is it set  
9 up from an authority standpoint?

10 MR. BECK: Basically, the authority has the  
11 bonding capability to go out and get the bonds, and then  
12 they'll put the money up for the project to be developed,  
13 but it will be cash flow streams from the projects that  
14 will repay the money, and/or a commitment from the  
15 utility.

16 CHMN. MAYES: Ed, real quickly, the Sunrise  
17 Powerlink project in California, I don't know if it's -- I  
18 always misstate it. Is it Sunrise?

19 MR. ALBERT: Sunrise power line project.

20 CHMN. MAYES: The Sunrise power line project in  
21 California, which model would you put that in? Was that  
22 sort of just a run-of-the-mill sort of utility-specific  
23 project or --

24 MR. BECK: Chairman Mayes, I'm not sure which one  
25 that one is using. I don't know if anyone else does.

1 CHMN. MAYES: Does anybody know? I know it was  
2 controversial. It took a long time, pretty hellacious  
3 process for the utility over there.

4 MR. ALBERT: I'm not aware of any cost recovery  
5 model other than the normal course of business that's  
6 applying to Sunrise.

7 CHMN. MAYES: Okay.

8 MS. ORMOND: Other questions?

9 Okay. Thank you, Ed. We're going to transition  
10 to Tom Wray who is going to talk about the finance  
11 subcommittee.

12 Before Tom, one last question? I know you have  
13 one. Did everybody have Mexican food for lunch like I  
14 did? Okay.

15 MR. WRAY: Madam Chairman, if we could go off the  
16 record.

17 CHMN. MAYES: Yes.

18 (A brief discussion was held off the record.)

19 MR. WRAY: Madam Chairman, my name is Tom Wray.  
20 I'm the chairman of the finance committee of the Renewable  
21 Transmission Task Force. And the purpose of the briefing  
22 today is to give you an update on our past activity. And  
23 after the discussions that we learned, that I hope will  
24 come out in our afternoon discussions, will help us  
25 formulate our work plan for the rest of our period prior

1 to the end of the summer.

2 Let me say that everything that we have produced,  
3 including an interim report that's been circulated and  
4 today's presentation, has been filed in Docket Control as  
5 of last Thursday and is available at WestConnect.com.

6 The finance subcommittee, going back to a point I  
7 have heard you make at least three times so far today, is  
8 it was created in direct response to the Commission's  
9 order. The vehicle for formation of the committee was  
10 through SWAT and the Renewable Transmission Task Force,  
11 which I would have to say was a very convenient available  
12 vehicle for the Commission, because all of us are into  
13 central or regional planning activity, and so we were able  
14 to respond. So the finance subcommittee was created on  
15 the basis of coming out of that order.

16 The objective of the committee is to develop  
17 recommendations for financing renewable transmission  
18 projects here in Arizona and to supplement today's  
19 workshop for the utilities who are subject to the order of  
20 the Commission, not Southwest Area Transmission Group, the  
21 planning group, or its committees being subject to the  
22 Commission's order. That's an important distinction.

23 We have held two meetings thus far, one back on  
24 February the 18th -- that's a typo -- and back in early  
25 March. Both of those meetings were well-attended, and



1 representatives from the utilities subject to the order  
2 were there. A lot of independents were there, and I think  
3 it represented a very good cross section of stakeholders.  
4 We developed an interim report which has been circulated  
5 and is also filed in Docket Control.

6           After today's workshop, follow-up activities will  
7 take place after today with the subcommittee, and we'll  
8 develop a work plan for the balance of the summer,  
9 yielding in a report, which I'll discuss more in just a  
10 minute, in September.

11           This is a timeline that we developed in the  
12 subcommittee from the very outset. It's a little bit hard  
13 to read. I have got larger copies of it here I can pass  
14 around, particularly for this afternoon. Because I think  
15 it will keep us on track with what the order is requiring  
16 and the due dates.

17           We're basically in the middle of this timeline in  
18 the workshop period, April. At the time we developed the  
19 timeline, we didn't know the date of the workshop, so we  
20 just blanked the month of April since the order said by  
21 the end of April a workshop or shops or planning sessions  
22 would take place. That's why that is written that way on  
23 the graphic.

24           But the idea there at Point No. 7 is that we  
25 would, based on the workshop, reconvene the finance

1 subcommittee, along with the full Renewable Transmission  
2 Task Force, and look at the direction and scope of the  
3 investigation of not only the finance subcommittee, but  
4 the ARRTIS subcommittee as well. I think a lot has been  
5 discussed earlier in their presentation about what is of  
6 interest to the Commission and what they're doing.

7 But I want to focus on the end objective of the  
8 finance subcommittee is to not just simply generate  
9 another report that will collect dust on some bookshelf  
10 someplace, but to actually recommend a form of order that  
11 would be made available to this Commission to consider  
12 with respect to how costs allocable to renewable  
13 transmission projects that would be the subject matter in  
14 a rate case by a utility before this Commission might be  
15 treated, and what those protocols might be so that the  
16 rules of engagement for getting cost recovery and  
17 reimbursement on capital invested, those rules of  
18 engagement are known.

19 I believe that if that conundrum is confronted in  
20 this form of order for your consideration, it will go a  
21 long ways to destroying the chicken-and-egg standoff.

22 Basically, meeting number one was an  
23 organizational meeting. We, of course, reviewed the  
24 relationship of the subcommittee with both SWAT and RTTF.  
25 We reviewed the allocable -- the pertinent sections of the

1 Biennial Transmission Assessment, the fifth BTA, and, of  
2 course, the Order 70635, and discussed among the committee  
3 attendees the scope and schedule and timeline that I just  
4 showed you.

5           And then we set about trying to define what a  
6 renewable transmission project might be as a working  
7 definition. And I can tell you that there are as many  
8 versions of that as there are stars. And so thereupon it  
9 shouldn't be surprising, Madam Chairman, that we have not  
10 reached consensus on that, but we're working on it. And  
11 then what we wanted to accomplish.

12           At the second meeting we talked about cost  
13 recovery methodologies for renewable transmission  
14 investments. Some of those that may be in an application  
15 by a utility, Madam Chairman, in a case here would include  
16 things like preliminary survey, investigation,  
17 environmental fatal flaw screening for a particular  
18 transmission project.

19           Even though you may list the top three, all of  
20 those have to go through a very close screening for  
21 specific performance, including system modeling, power  
22 flows, how the capacity factors of the connected  
23 generation will behave on the system during N-1 conditions  
24 and so forth. All of that cost that would take place in  
25 the first part of the planning would be, at least in our

1 view, candidates or eligible for recovery in rate base.  
2 So there's a whole host of those kinds of costs. We  
3 talked about that at the second meeting in a great amount  
4 of detail.

5           The second item up there talks about what we're  
6 calling base and incentive rates of return on common  
7 equity invested by the shareholders of utilities subject  
8 to your jurisdiction. And again, there was a lot of  
9 discussion. No consensus or agreement necessarily on some  
10 of this. If you go back to the record that's in the  
11 docket, you'll see some things that we presented, or that  
12 I presented. I can say that it generated a lot of  
13 discussion. But there are some basic aspects or policy  
14 level matters that I hope we can discuss this afternoon.  
15 And if they don't come up on their own, I'll bring them  
16 up.

17           Transmission capacity, subscription  
18 methodologies, there's a lot of words for how transmission  
19 capacity gets secured by users. There are open seasons  
20 that have been used in the past. Auctions are often used  
21 in order to be the least -- of the least discriminatory  
22 methods to allocate capacity.

23           The most recent orders coming out of the Federal  
24 Energy Regulatory Commission, particularly Chinook-Zephyr  
25 and the Green Mountain decision, talks about the

1 nondiscriminatory nature of anchor shipper bilateral  
2 contract arrangements as being inherently nondiscriminatory  
3 That is yet to have been agreed on, at least among the  
4 Commissioners so far, on anything less or more than  
5 50 percent of the available transmission capacity in such  
6 a project.

7           So in the case of Chinook-Zephyr, the Commission  
8 there found that 50 percent or less of the transmission  
9 capacity in each of those two direct current lines could  
10 be set aside to a single shipper in order to secure the  
11 prospect that those lines could be ultimately financed.

12           It was the Federal Energy Regulatory Commission's  
13 attempt at mitigating chicken and egg. We'll see whether  
14 or not that's going to work out exactly as they hope.

15           And then the balance of the transmission capacity  
16 in the case of Chinook-Zephyr would be subject to open  
17 season. Those are -- both of those lines are 3,000  
18 megawatt direct current bipolar facilities that would dump  
19 into the El Dorado Valley near Lake Mead. Don't know how  
20 the roughly -- the last time I checked -- some 9,000  
21 megawatts going into that valley are going to get out, but  
22 there are a lot of plans to get it in there.

23           We spent some more time, unsurprisingly, on  
24 trying to define a renewable transmission project, and  
25 equally unsurprisingly failed to agree. We have more time

1 to work on that, and we'll hopefully get some ideas out of  
2 the workshop discussion this afternoon.

3 Yes, Madam Chairman.

4 CHMN. MAYES: Well, Tom, were you looking for  
5 consensus? Were you looking for sort of a majority?  
6 Certainly not unanimity.

7 MR. WRAY: Madam Chairman, I'm reaching the point  
8 that I would settle for exhaustion. I have given up a  
9 long time ago looking for unanimity. Consensus would be  
10 great. I think we'll be able to find our way to come up  
11 with something that's workable for the parties.

12 CHMN. MAYES: Okay.

13 MR. WRAY: We also spent quite a bit of time  
14 talking about recent FERC policies and orders. I  
15 mentioned Chinook-Zephyr. Tall Grass was another order  
16 that's fairly recent, and then some of the legislative  
17 developments that we've already talked about today at the  
18 Congress.

19 I might point out that Senator Reid's attempt at  
20 defining an RTP sort of ended up saying that it had to be  
21 75 percent -- it had two triggers on the definition,  
22 75 percent of the capacity, not measured by capacity, not  
23 the energy. That's an important distinction. It's a real  
24 important distinction, because your average capacity  
25 factor on the generators that are, quote, renewable are

1 typically one-third of a base load steam unit that would  
2 be what is using most of the transmission that's out there  
3 today.

4 A lot of the capacity factors on transmission  
5 lines today are approaching, you know, 80, 90 percent.  
6 Some of these radial renewable transmission lines probably  
7 would not be north of 50 percent, depending on the mix of  
8 CSP and wind on the facility.

9 At any rate, the other trigger in that bill was  
10 that it is a requirement, at least in the draft of his  
11 bill, it was 75 percent by capacity, and at least one  
12 transmission service agreement that was fully executed  
13 with a transmission user between the user and between the  
14 buyer and the seller. So he wanted a commercial  
15 arrangement and a 75 percent trigger by capacity, and that  
16 would make the applicant eligible for our federal loan  
17 guarantees. That was the low-hanging fruit at least in  
18 the last draft that I saw.

19 Madam Chairman.

20 CHMN. MAYES: Tom, and then the Bingaman bill  
21 wouldn't have that 75 percent requirement, correct? It's  
22 just almost anything qualifies under Bingaman's for  
23 federal preemption.

24 MR. WRAY: The last version of the bill that I  
25 have seen, that's correct.

1 CHMN. MAYES: Okay.

2 MR. WRAY: The interim report basically was  
3 provided to the chairman of the SWAT and RTTF committees.  
4 It's filed in the open docket that you have open on this  
5 matter, and it included an introduction, work-to-date  
6 summary, areas of inquiry, and a lot of appendices. I  
7 believe some 12 megabytes.

8 We tested all of the subcommittee members'  
9 firewalls, and most of them failed. So one of the  
10 benefits of posting at WestConnect is it operates as a  
11 great FTP site for downloads.

12 And that's contact information.

13 So what I would -- I'll defer here to Amanda on  
14 where we go next, but I hope that this afternoon we can  
15 drill into some of the policy questions and see what kind  
16 of reactions we might get from members of the Commission  
17 on some of these ideas. That would be very helpful to the  
18 finance subcommittee. Thank you.

19 MS. ORMOND: Thank you, Tom.

20 I can reiterate what Tom said. We have a list of  
21 questions that we're going to try to pose to the audience  
22 and to the Commissioners to get your feel for ways that  
23 we're going. This is uncharted territory. This has not  
24 been down in many places in the country. So we're trying  
25 to be informative and we hope we can have a pretty good



1 dialogue on that.

2 So that is the conclusion of the presentations  
3 that we had. Hopefully it gives you a good background of  
4 what we've done to date, what we're kind of working with,  
5 the areas that are gray areas to date.

6 We now wanted to transition to allow the  
7 utilities to make statements or presentations related to  
8 how they view these issues going forward, both on the  
9 generation identification side and on finances.

10 So I think we'll go in alpha order and start with  
11 APS, and then do SRP, and then Southwest Transco?

12 MR. ALBERT: Give me just a moment to pull all of  
13 these up here and get them ready.

14 MS. ORMOND: Southwest Transmission Cooperative,  
15 thank you, and then TEP. And hopefully these are just  
16 going to be short, 10-minute presentations, correct?

17 MR. ALBERT: Yes.

18 MS. ORMOND: And then we are going to open it up  
19 to the audience. If you prepared remarks, we welcome  
20 those. If you just want to come up and say here is what I  
21 heard and this is what I think needs to be done, you're  
22 welcome. We would like to keep that to three minutes, if  
23 you will. And we will have a time clock, but the audience  
24 will start booing you if you don't get off the stage in  
25 the appropriate amount of time.

1 MR. ALBERT: Are we ready? Brad Albert from  
2 Arizona Public Service again.

3 So my presentation is more about sort of getting  
4 our afternoon discussion started with teeing up some of  
5 the policy issues that we see with implementing renewable  
6 transmission projects.

7 So let me just start with the first policy issue,  
8 which is timing. We've had a lot of discussion and  
9 referencing the chicken-and-egg problem this morning. And  
10 Amanda did a good job of sort of illustrating what that  
11 means in terms of typically a transmission project has a  
12 much longer lead time than developing a renewable energy  
13 project, so how do you sync those up.

14 And so the comment I want to make before I start  
15 talking about this any further is just sort of the balance  
16 that we need to strike here. Because it is sort of the  
17 dual-edge-sword type thing when you're talking about  
18 developing renewable transmission projects.

19 Being late for the project, i.e., having a  
20 project that can't support the timing that the renewable  
21 project demands, well, that's bad. Certainly, on the  
22 other side of the sword is the issue of, I don't ever like  
23 to have a transmission project and make an investment  
24 earlier than it's needed, because then someone has got to  
25 be paying for that investment to support it.

1           So it really is a question of achieving the right  
2 balance. I don't know if we're ever going to be perfect  
3 in that balance, but that's what we're really striving to.

4           Okay. So in the middle there, transmission  
5 project should not delay a desired renewable. What are  
6 the type of things that we might need to talk about to  
7 accomplish that? Some of them are relating to permitting.  
8 You know, we may need to be looking at allowing permitting  
9 of siting approval for a project that doesn't have a  
10 clearly defined need, i.e., it may not have a renewable  
11 PPA that's already signed up and ready to go on it.

12           We may want to advance these renewable  
13 transmission projects, at least through the siting  
14 process, without having that need clearly identified yet.  
15 It could require some changes to the CEC requirements in  
16 terms of that clear need, but also providing a time frame  
17 that supports being able to have that project teed up  
18 through the siting process and sort of waiting for that  
19 first renewable project to come onboard and be ready to  
20 proceed with the construction of it.

21           CHMN. MAYES: Brad, it's an interesting question  
22 and point. Is it APS's view that the clear need is  
23 evidenced by or demonstrated by a PPA over simply the  
24 interconnection request, or could the Commission consider,  
25 you know, the overwhelming number of interconnection

1 requests, say, in the Harcuvar Valley or in the IA  
2 corridor as being clear -- evidence of clear need? I'm  
3 not asking -- maybe I'm asking you to play lawyer, but,  
4 you know.

5 MR. ALBERT: And please, I don't want to play a  
6 lawyer today. Chairman Mayes, I would say that we really  
7 haven't -- I really haven't gotten that far in terms of  
8 thinking through how you would define it or what the  
9 requirements would be. I think all of the things that you  
10 just mentioned there are sort of relevant topics to  
11 consider in the need determination.

12 CHMN. MAYES: And really it probably is in the  
13 purview of the Commission to make that legal determination  
14 about what -- you know, how we view the clear need  
15 requirement in the statute.

16 MR. ALBERT: I would think so.

17 CHMN. MAYES: Okay.

18 COM. NEWMAN: Madam Chair, I just came from an  
19 interesting luncheon talking with some new potential  
20 providers. I was introduced to folks from San Francisco  
21 and a new Spanish company. They are clearly -- for  
22 example, I'm just going to give this example. They want  
23 to build in Kingman. They want to spend a billion  
24 dollars. They're just now meeting with UniSource and APS,  
25 and they're not -- using them as an example, let's say.

1           And certainly they want to come here. They  
2 really probably can't get capitalization for their project  
3 unless there was a PPA, but from my conversations with  
4 some of these companies now and that company, they need to  
5 interact from a transmission standpoint and know that they  
6 can get their loads to either an internal market or an  
7 external market. But they're interacting with APS in an  
8 IOU who is in charge of those transmission lines.

9           So this is all -- I guess this is a  
10 chicken-and-egg kind of issue as well, because we have --  
11 not only in Arizona, but all across the country, we have  
12 these fiefdoms controlled sometimes by IOUs, sometimes by  
13 other entities, and that is what has been described to me  
14 as a deterrent to get wind to come here and solar to come  
15 here. Because unless they have a PPA, they can't get on  
16 your line. They may have to pay tariffs, but they don't  
17 really know what is going on with your line, because  
18 that's an independent, proprietary sort of situation.

19           Am I describing anything that makes sense to you  
20 in the sense of the dilemma that companies that would like  
21 to come here and put their projects in can't do it because  
22 of, for lack of a better word, the proprietary fiefdom  
23 quality of transmission intrinsically? Do you hear what  
24 I'm saying?

25           MR. ALBERT: I think there's a couple of points,

1 Commissioner Newman, that you have raised there. One of  
2 them being, obviously, the ownership of the transmission  
3 infrastructure in a state like Arizona is very mixed.  
4 It's a patchwork quilt, if you will, of different owners.  
5 So that could present some challenges.

6           The other thing we talked a little bit about this  
7 morning was sort of the interconnection process that a  
8 company like that would have to go through in order to  
9 apply to interconnect to our lines and potentially get  
10 transmission service. And one of the things that we've  
11 seen, you know, it is a little bit of a chicken and egg  
12 from the perspective that the projects will not -- or we  
13 haven't seen projects that are willing to move forward  
14 with interconnection or even contracting for transmission  
15 service unless they have a signed PPA with a utility, just  
16 because the risk of financing it and the magnitude and the  
17 dollars involved is such that it just won't work for them  
18 financially. So that's another chicken-and-egg situation  
19 that a developer like that would face.

20           COM. NEWMAN: Right. So what kind of policy --  
21 Madam Chairman, if you can forgive me for a second. What  
22 kind of policy can the Commission, who would like to  
23 improve the situation, you know, what can we do for the  
24 entrepreneurs to come here? What can we be telling the  
25 SRPs and the APSS of the world to do that would be fair to

1 both sides so we can help grow this industry?

2 MR. ALBERT: Commissioner Newman, I think that is  
3 exactly the topic that we're going to spend the next  
4 couple of hours talking about is the policies and the --  
5 what are the policies that we can take to advance  
6 renewable energy development, put the infrastructure in  
7 place for them, and how do we balance those policies and  
8 that desire to enhance that with the cost recovery and who  
9 pays, which is sort of the next topic that I'm going to  
10 come to in my presentation.

11 COM. NEWMAN: But it's a dilemma. You know, I'm  
12 grappling with the dilemma of the IOUs own the line,  
13 nobody is going to invest in the property, all of the  
14 balls are in the court of the IOUs. There's a tendency to  
15 be very -- with good reason -- to be very fiduciary about  
16 who they're investing in and who they're not investing in,  
17 because it costs so much money.

18 But then again, these projects, it's all in the  
19 hands of IOUs in the end. What can the Corporation  
20 Commission do to sort of even the playing field for  
21 entrepreneurs?

22 MR. ALBERT: And Commissioner Newman --

23 COM. NEWMAN: I asked the same question, but I  
24 would like somebody in this room to address that question,  
25 as well as you. And you're representing APS, so I'm

1 putting you in a -- you're a facilitator, but you also  
2 represent APS, so I might be putting you in a situation  
3 where you might not be able to answer the question  
4 totally.

5 Well, I haven't seen anybody's lights go on.  
6 Maybe I'm not getting through to you. I would like to  
7 hear from you, if there's some other people out there on  
8 this issue.

9 MS. ORMOND: If I can jump in, Commissioner  
10 Newman.

11 COM. NEWMAN: Yeah.

12 MS. ORMOND: It depends on what you're talking  
13 about, whether you're talking about new transmission or  
14 existing transmission. If you look at Arizona, and if I  
15 put on a developer hat, if you look at Arizona and its  
16 queue process compared to say California, ours is not  
17 broken. If you have a project, you put in your  
18 interconnection request to the electric utility. But as  
19 Brad mentioned, you're not going to develop a project,  
20 you're not going to move forward until you have what we  
21 call the golden egg is the purchased power agreement.

22 I think that this state is addressing that on a  
23 renewable energy standard side. You have said to the  
24 utilities you must purchase a certain amount of renewable  
25 energy. I don't know that it's in the Commission's best



1 interests to try to dictate that the utilities purchase  
2 specific PPAs or have any agreements with PPAs. So I  
3 think it goes back to the transmission planning, making  
4 sure we have adequate transmission for newcomers into  
5 areas that we know will be developed for generation. So I  
6 think we are addressing at least some of it.

7 COM. NEWMAN: And just a subset of that on the  
8 engineering side of the question. We're not -- we are the  
9 Corporation Commission and we regulate -- we are not what  
10 I would call a robust engineering group in the sense of  
11 knowing the status of the lines. We have to depend on the  
12 IOUs to tell us what is going on, because we don't really  
13 have a backup to know what is going on and not what is  
14 going on but for subpoenas and things like that.

15 And so we have to trust you. We have to trust  
16 the IOUs to know that we need to build more transmission  
17 lines because of X, or we don't need to build more  
18 transmission lines because we're not planning on saying  
19 okay to any of these PPAs in the near future. But I think  
20 you're right, the Renewable Energy Standard and perhaps  
21 expansion of that might expedite this process.

22 But do you understand the technical dilemma that  
23 I think that the Commission has, just after being here 100  
24 days, that we have to trust the IOUs to tell us about what  
25 is the state of the transmission lines? We don't have an

1 authority like they have in other states, in some states,  
2 that actually have their own engineering staffs that  
3 actually would be advising the authority on what needs to  
4 be built and what doesn't need to be built.

5 MS. ORMOND: Commissioner Newman --

6 COM. NEWMAN: So I have to rely on you. And I  
7 trust you because I have known you for so many years, but  
8 you hear what I'm saying.

9 MS. ORMOND: Yeah, I do. Commissioner Newman,  
10 the ACC has also required 10-year plans be filed with this  
11 Commission. They've also authorized a Biennial  
12 Transmission Assessment. So you actually get quite a bit  
13 of information coming together. Anybody that's building  
14 transmission in this state comes to you in the Biennial  
15 Transmission Assessment. So I think that you do get quite  
16 a bit of information that you can rely upon about need.

17 We mentioned earlier in the day about the, well,  
18 what are we trying to build? Are we trying to build for  
19 an export market or are we trying to build for just native  
20 load? If we're building just for native load, you know,  
21 my personal opinion is that I'm relatively comfortable  
22 that the utilities are going to do a decent job, because  
23 they have to supply the electrons.

24 If we're trying to build to facilitate export,  
25 that's a whole different question, because then we have,

1 well, who is going to pay for that, and where are the  
2 costs going to go, and how do we make sure that we have  
3 generators that are willing to pay for the transmission to  
4 be able to build it?

5           You know, we could tell APS or TEP, go out and  
6 build this line here, but if nobody wants to buy onto that  
7 line, well, then, that's not a very smart proposition.

8           COM. NEWMAN: And I answer that proposition with  
9 the fact that I think that we need to plan for both  
10 because of the -- because of where we are, our land and  
11 labor and potential capital all being a plus to the fact  
12 that we have this sun that the country might be expecting  
13 us to give to achieve energy independence.

14           And then the other reason why I have that  
15 position is that we happen to be in this very fortuitous  
16 time where the national government is looking to help us  
17 build this grid that we're all trying to talk about today.  
18 We're in a very unique situation to build both the export  
19 and import grid.

20           MS. ORMOND: Commissioner, the BTA order had also  
21 mentioned being able to do open seasons to try to kind of  
22 ferret out where is the interest in new transmission.  
23 That's another methodology that I think could be used if  
24 there's other developers that say, hey, we really want  
25 transmission in this area. Then a utility can do an open

1 season and say, okay, if that's the case, come forward  
2 with your proposal. How much capacity do you want and how  
3 much are you willing to pay, so we can look at the  
4 economics to say, do we have enough generation to actually  
5 load up that line and make the economics work to build  
6 that line. So there are some methods being tried in  
7 different areas.

8 COM. NEWMAN: Okay. Thank you.

9 MR. ALBERT: And I think at the end of the day,  
10 or end of October, more specifically, you know, we as  
11 utilities have to bring forward at least the top three as  
12 a minimum. But we also have to bring forward to you a  
13 value proposition that says -- or I'll call it a business  
14 case. We have to make a business case for these  
15 transmission lines to say that this is a good use of our  
16 customers' funds, our customers' money, to support the  
17 development of this project. And all of the ramifications  
18 of that, whether it's an export line, how likely is it  
19 that we'll be able to fill that line up and in what time  
20 frame to support the cost recovery associated with it.

21 COM. NEWMAN: Thank you. I thank you, Madam  
22 Chair.

23 MR. ALBERT: Let me get back on script here.

24 Just the last bullet item down there, I just  
25 wanted to point out there are risks of allowing the

1 transmission development to get too far ahead of the need,  
2 so to speak. And one of them that always comes to my mind  
3 is just as I look back over the last two years or  
4 two-and-a-half years that I've been doing this resource  
5 planning thing, and how much I have learned, how much  
6 things have changed from a technology perspective, and the  
7 rise and the development of solar technologies and  
8 everything.

9           So I just hold out the proposition that, I mean,  
10 we're likely to see significant changes in the future  
11 also. I can't really tell you how that is going to affect  
12 which transmission or how it's going to restack my  
13 prioritization of transmission projects maybe five years  
14 from now. Is it going to look the same as what I tell you  
15 in October? I don't know, but that's one of the things  
16 that we need to think through in this process also.

17           COM. NEWMAN: And then we also have to -- Madam  
18 Chair, we also have to look at -- I mean, before the  
19 recession hit, everyone in government was looking to try  
20 to figure out how we were going to fulfill the energy  
21 needs of the state with 12 million people as opposed to 6  
22 million people. And I don't think because we're in a  
23 recession now that we should go off of that planning  
24 chart. There might not be enough water, but we're  
25 certainly going to need, especially if we build more

1 power, the water associated with the power.

2 But you hear what I'm saying. I cannot perceive  
3 that there won't be a need to expand the transmission,  
4 both for export and transmitting electricity throughout  
5 interstate. I can't perceive of it.

6 MR. ALBERT: We need to keep being forward-  
7 looking.

8 So the next key policy question is who pays, and  
9 I just listed out some of the viable options. You know,  
10 captive transmission customers. I would call this more of  
11 the status quo type of mode of operation. That's how  
12 transmission gets built now for the most part.

13 Renewable resource project developers or merchant  
14 transmission project developers, both of those fall sort  
15 of into the same category of -- you know, we still have  
16 the chicken-and-egg issue that you referred to just a  
17 minute ago, Commissioner Newman, of those typically don't  
18 go forward in that way until they have signed PPAs and  
19 commitments from the utilities to help move those forward.

20 Ed Beck in his presentation had mentioned state  
21 funds and the Wyoming Infrastructure Agency model or the  
22 New Mexico RETA model. The one that I didn't hear  
23 discussed when we were talking about Reid and Bingaman a  
24 couple of minutes ago was one of the very important  
25 features of those two pieces of legislation, which is this

1 interconnection-wide cost allocation.

2 Sort of to take the California model that Ed  
3 mentioned in the Tehachapi case and widen that, part of  
4 the provisions of those bills would allow the  
5 interconnection-wide planning authority at FERC to  
6 allocate costs of transmission projects that they deem as  
7 necessary to whoever they deem the right people, the right  
8 states that are going to benefit from that. So we could  
9 see, under those models, transmission projects being built  
10 from Wyoming to southern Nevada, and a decision made that  
11 some of that cost needs to be allocated to Arizona.  
12 That's sort of the model that's being set up there.

13 Policy implications, you know, some of the things  
14 that we always talk about from transmission is that the  
15 transmission costs should be recovered from those who will  
16 realize the benefit from it. Okay. Certainly, that's a  
17 question, I think, that is relevant to the import versus  
18 export transmission discussion.

19 I already mentioned the next one.

20 And then the last one is who bears the risk that  
21 the transmission project doesn't get fully utilized? We  
22 certainly are going to put -- you know, look at everything  
23 that we can of who is going to -- who is likely users of  
24 the transmission project and how likely it is they're  
25 going to use it. But I can't predict the future, so there

1 is always a risk that the transmission project will not  
2 get fully subscribed over a reasonable period of time.

3 I have just got three more issues that I wanted  
4 to raise before I turn it over to the next one.

5 Export market and some of the additional  
6 challenges that export can bring. You know, with an  
7 export project, we have a lot of control over what happens  
8 on the Arizona side of the border. But in some cases just  
9 building the line to the Arizona side of the border  
10 doesn't get you all of the way home. It doesn't get you  
11 to the load centers, necessarily, in California.

12 The DPV-2 project is an important -- is a good  
13 example of a project that allows export of renewable from  
14 Arizona, but also that California end of the equation is  
15 something that's being addressed through Edison's planning  
16 efforts in order to get that renewable energy all the way  
17 to where it's needed to be consumed.

18 A contrast might be like the Palo Verde to North  
19 Gila-2 line, and that line starts at the Palo Verde Hub  
20 and goes west to Yuma to the North Gila substation. What  
21 happens on the west side of the border, there's still some  
22 transmission links that will be needed over there in  
23 addition to the Sunrise Powerlink, which doesn't start at  
24 that same Yuma location. It's about 90 miles west from  
25 there that it will start from.



1           Some of the other questions that we need to ask  
2 are what are the other renewable resources that are over  
3 there that that Sunrise Powerlink is going to tap into,  
4 you know, some of the solar resources, geothermal  
5 resources over at the Imperial Valley. That's what we're  
6 competing against. So all of that is part of this  
7 business case or this value proposition that we need to  
8 look at.

9           You know, Tom Wray raised a question of defining  
10 a renewable transmission project, and I second his  
11 comments in terms of the challenges involved in coming up  
12 with that. It could be very relevant to come up with a  
13 workable definition here, because there could be some  
14 provisions that we just -- policy provisions that we  
15 decide on here, for instance, favorable siting-type  
16 provisions, cost recovery assurances, or even incentive  
17 rate-type treatment that depend upon that renewable  
18 transmission project definition.

19           You know, some of the challenges that we face are  
20 some of the sub-bullets up there. For instance, you can't  
21 predict the future exactly. FERC's policies right now,  
22 the way they're worded, would not allow a provider like us  
23 to discriminate on the use. If we build a new  
24 transmission project with the thought process that it's  
25 backed by renewables and that renewables are going to use

1 it, but then a gas generator comes in two years from now  
2 and says, well, I want to interconnect to that line and I  
3 want to use it, the current policies would say that I  
4 can't discriminate against that user. So that's a  
5 challenge that we face.

6           The other one down there is what I call  
7 robustness. I really believe that the best projects, the  
8 best transmission projects are likely to have multiple  
9 potential uses. We talked about Palo Verde east  
10 transmission a little bit earlier this morning as a good  
11 example of a lot of different types of resource needs that  
12 APS will have in the future could be supported by Palo  
13 Verde east transmission. So that's just one example.

14           And then the last one up there, prioritization.  
15 I think I already spoke about that. Really, what we're  
16 trying to seek here are the projects that are likely to  
17 provide the best value for our customers and also to  
18 support the renewable -- expansion of renewables as per  
19 the order.

20           So with that, any questions, or we'll get ready  
21 for the next presenter.

22           CHMN. MAYES: Real quick question. Well, two  
23 quick questions. First, and I should have asked Amanda  
24 this, so it's for either one of you.

25           Amanda, is your subcommittee looking at which of

1 the interconnection requests on the slide that Rob  
2 Kondziolka presented have PPAs currently?

3 I mean, obviously, I know of several. Southern  
4 California Edison has signed several PPAs with -- well,  
5 they've been publicly announced -- with BrightSource  
6 Energy, for instance. Is that something that you will be  
7 factoring into your analysis, and any other PPAs that have  
8 been signed throughout state of Arizona, overlaid on  
9 top -- obviously, we have the information about the  
10 interconnection requests. Now we're starting to see some  
11 of them mature into actual PPAs.

12 MS. ORMOND: Madam Chair, great question. Some  
13 of the information -- well, the information that's in the  
14 interconnection request is part private information, and  
15 so you have to be careful of what you can put out there.

16 No, we actually hadn't, as far as I know,  
17 considered adding that additional layer of you've got  
18 these interconnection requests and let's look and see who  
19 has PPAs. I think that happens as a matter of course when  
20 you go through the process of actually starting the  
21 interconnect, but --

22 MR. ALBERT: And we could only incorporate that  
23 data to the extent that the developers are willing to  
24 share it with us, or that it's already publicly known,  
25 because we don't have that information on all of the

1 projects that are in the interconnection queue.

2 CHMN. MAYES: Okay. What about on the -- I mean,  
3 Brad, you alluded to an issue on the North Gila line,  
4 which I think is a very intriguing situation. The North  
5 Gila line, North Gila-2, as I understand it, we've  
6 already -- well, I should understand it. We have  
7 already -- it's got a CEC, correct? You are in the  
8 process now. You probably have already bought the  
9 right-of-way.

10 MR. ALBERT: I can't answer the question. I  
11 don't know exactly how much right-of-way has been  
12 procured.

13 CHMN. MAYES: Probably buying it, though, as we  
14 speak, and yet APS has decided to push off the in-service  
15 date of that line. But when you look at it on this map,  
16 there's a whole heck of a lot of solar right along that  
17 line. But then you alluded to -- what I think you were  
18 alluding to was this notion that there may be PPAs that  
19 have been signed for California utilities on the  
20 California side of the border near that line in the  
21 Imperial Valley, meaning, I think your intimation was that  
22 that would compete with the solar that we might develop in  
23 Arizona in terms of exporting to California.

24 MR. ALBERT: And Chairman Mayes, what I was  
25 really -- the real weak link in the process of getting to

1 that San Diego market is solved by the Sunrise Powerlink.  
2 And once the Sunrise Powerlink gets full, one of the  
3 prospects would be that.

4 CHMN. MAYES: Right.

5 MR. ALBERT: And I'm aware at least that  
6 San Diego has a large-scale solar project -- and I don't  
7 know if it's just one or a couple -- over in the sort of  
8 west of El Centro area over there. Either way, there's  
9 plenty of solar resources and geothermal resources over in  
10 that area that can be tapped into. So it's a question of  
11 the competition.

12 Now, if I could, on the North Gila No. 2 project,  
13 you know, our timing that we've specified in the 10-year  
14 plan was really predicated upon a need, and that need was  
15 to serve our load growth in the Yuma area. And so this  
16 process that we're going through here really is going to  
17 cause us to overlay another need on top of what defined  
18 that project timing in the 10-year plan, and that is  
19 renewable resource development. We've seen plenty of  
20 interconnection requests.

21 CHMN. MAYES: Along that line?

22 MR. ALBERT: Along that I-8 corridor.

23 CHMN. MAYES: Might that change your timing  
24 decision?

25 MR. ALBERT: That's one of the things that we're

1 going to be looking hard at during this analysis project.

2 CHMN. MAYES: I think that makes a lot of sense.

3 And then if you had -- I mean, if you had to tell  
4 this Commission the two things that are most important in  
5 terms of encouraging your utility to go out and build  
6 renewable energy transmission, let's say we identify the  
7 three, let's say you identify three lines, it could be  
8 more, it could be -- well, it's going to be three lines at  
9 least, right?

10 What is the one or two things that this  
11 Commission needs to do to better the chances of needed  
12 renewable energy transmission?

13 MR. ALBERT: And Chairman Mayes, certainly the  
14 one that comes to the top of my mind is just the cost  
15 recovery issues associated with it.

16 CHMN. MAYES: Surprise.

17 MR. ALBERT: Yeah, no question. And oh, I'm  
18 sorry. Just a little bit further on that. You know, one  
19 of the ways that I think that we can advance the agenda  
20 here is also the chicken-and-egg problem and the timing  
21 problem of how do we get projects maybe not necessarily  
22 built, but teed up to support that renewable project and  
23 the timing of the perceived renewable projects out there,  
24 which could involve spending, you know, significant sums  
25 of money on up-front development costs, even right-of-way

1 acquisition and some of those type of issues, so that we  
2 have the schedule for the transmission line actually being  
3 built synced up to what the renewable project that's going  
4 to be built that needs it. And so that's up-front  
5 development costs that also assurances of cost recovery is  
6 important to that.

7 CHMN. MAYES: I know some of the developers out  
8 in the audience would say that their ability to get a PPA  
9 is often contingent on your decision to build  
10 transmission, and therein lies the conundrum.

11 And so, you know, but -- so cost recovery of the  
12 up-front development costs. And then, two, just cost  
13 recovery, period, of the line. But for a utility like APS  
14 that has a transmission cost adjustor mechanism already,  
15 what does that mean? What more -- I mean, you know, some  
16 of these other utilities don't have a TCA, but you do. So  
17 what more do you need to actually be encouraged to build  
18 the line? I mean, it's a straight passthrough on your  
19 customers' bills.

20 MR. ALBERT: Chairman Mayes, that's exactly  
21 correct. And I think, you know, some of the lines are  
22 starting to get grayed in terms of the reasons why we  
23 build transmission projects, which, when you look at sort  
24 of the status quo thinking of how we go about building  
25 transmission projects to support our native load customers

1 and everything, it's clear that when we go get that  
2 transmission project put into our FERC rates and then  
3 passed into the TCA, that there's a need supporting the  
4 load growth, reliability, those type of needs.

5 In the case of an export market, we can have some  
6 different types of challenges in terms of justifying  
7 getting that into the FERC rates and how they perceive  
8 need for that.

9 CHMN. MAYES: So the FERC rates are contingent on  
10 native load needs?

11 MR. ALBERT: Well, I guess particularly when you  
12 talk about potentially having our customers, our  
13 transmission customers, which the largest part is,  
14 obviously, our APS retail customers, our transmission  
15 customers being responsible for the costs until you have  
16 got -- for an export line, which is potentially benefiting  
17 California or another state, and our customers bearing --  
18 our transmission customer rate base bearing the risk that  
19 that doesn't come out and you don't have renewable  
20 projects actually paying you a transmission tariff to use  
21 it and recover those dollars.

22 MS. ORMOND: Chairman, if I can add to it, I  
23 think Tom Wray said it best when he said the rules of  
24 engagement. Folks that are going to invest in  
25 transmission, whether it be APS or a merchant or anybody



1 else, they're going to want to know what are your  
2 procedures. What does renewable energy transmission line,  
3 how is it defined?

4 So certainly dollars and cents come to the top of  
5 the pile, cost recovery, but also incentives. Are there  
6 incentives? We're starting to see the FERC now put out  
7 some incentives to develop renewable transmission  
8 projects. So that kind of goes to a finance picture.

9 So it's all of those things. How are they going  
10 to be treated in the siting process? So I like that kind  
11 of rules of engagement. What do I have to do A to Z to be  
12 able to get my project built and financed.

13 CHMN. MAYES: I wrote that down, too, and I know  
14 that we will get some recommendations from Mr. Wray's  
15 committee.

16 COM. NEWMAN: Yeah. And on the FERC incentives,  
17 I wrote that down before you said it. And this is just  
18 part of the intergovernmental conundrum of how to figure  
19 out what is going to come out of Congress and what is  
20 going to come out of FERC. But it seems to me that our  
21 Arizona customers are already -- we don't want to unduly  
22 burden them with the costs of export markets. But at the  
23 same time, the more we wean ourselves off of coal and  
24 natural gas and all of the money that we're exporting out,  
25 approximately \$8 billion a year, they do get a benefit in

1 a sense because they're spending less money in importing,  
2 you know, the coal, for example, and no transmission -- no  
3 costs for rail to get the coal here, all of those  
4 different levels of analysis.

5 But it seems to me that -- and Madam Chair, I'm  
6 not sure who in this, you know, in this line of authority,  
7 you know, works with FERC in the sense we need to have a  
8 top person in Arizona, perhaps you, Madam Chair, but  
9 someone from the Commission who basically talks to FERC  
10 about that issue. That if they would like to see Arizona  
11 develop its solar market for the rest of the country, that  
12 the incentive -- that there be some sort of incentive  
13 built in so our Arizona customers are not unduly burdened.  
14 So that's a whole chapter of this book in itself.

15 MS. ORMOND: Yeah.

16 COM. NEWMAN: And, you know, with friends at the  
17 White House, I guess. We have to talk to the Department  
18 of Energy about that. We have to talk to the White House  
19 about that. That's a whole intergovernmental conundrum.

20 Do you agree?

21 MS. ORMOND: It is. It is complex.

22 So if there's no other questions, can we  
23 transition to SRP? And I'm going to hold questions until  
24 we get through these utility presentations, and then we  
25 can ask questions.

1 MR. KONDZIOŁKA: Chairman Mayes, Commissioners  
2 Newman and Stump, good afternoon. Robert Kondziolka for  
3 Salt River Project.

4 Let's get right into the issue here. We were  
5 asked to address five key issues, and timing was the first  
6 one. SRP has a long history of participating and leading  
7 in transmission development and working with the  
8 Commission. To that end, we plan to continue this  
9 tradition, but I believe as you are aware, there are  
10 certain limitations, and that is SRP is subject to our  
11 board. And although our board has very similar renewable  
12 energy requirements as the Commission, SRP will continue  
13 to make certain that our needs are met through our board  
14 and their approvals.

15 I do have two specific issues to address the  
16 timing issue, and as everyone here has been referring to,  
17 how we get started. And that first one is something that  
18 I had addressed with this Commission last year under a  
19 similar type of question, and that is what can be done to  
20 improve the coordination and timing.

21 And that first one is permitting of corridors to  
22 renewable energy zones. I think there's a good  
23 opportunity here to take a look at allowing that part of  
24 the portion that Mr. Beck addressed to be removed off the  
25 table so that as we look towards renewable energy

1 development, we don't need to wait for that whole time  
2 frame of public processes, permitting, certification. If  
3 we have these transmission projects lined up, it would  
4 allow the timing of transmission and the interconnection  
5 to time much better with the development of renewable  
6 energy.

7           And I have noted here a few other elements here  
8 if we take a look at the broader evaluation of need,  
9 because we don't have the very specific needs that are  
10 currently identified in our current CEC applications. And  
11 same thing in here as we look at going for broader need.  
12 We can facilitate the in-state needs as well as the export  
13 opportunities in these type of applications.

14           Hand in hand with that, would then be the longer  
15 term CECs. And I think as you can see, the key points  
16 that are listed here, much of this goes into providing  
17 certainty to everybody involved in the process. Once a  
18 renewable energy developer knows that there is a permitted  
19 corridor or a line, it will tend to provide their  
20 attention and direct their resources into those areas as  
21 opposed to areas that may lack transmission. And they  
22 would provide that certainty that they know that the line  
23 will be developed as long as renewable resources show up.  
24 So those are two specific inputs and recommendations on  
25 how we can improve the timing aspect.

1           As to who pays, I have a series of items here.  
2   And for SRP, we certainly would look for the lowest cost  
3   option on transmission. We're definitely not looking for  
4   the highest cost. And we're going to invest in that  
5   transmission that directly benefits the SRP customers.

6           And I think we've got a very rich tradition, as I  
7   mentioned before. And Commissioner Newman, when we talk  
8   about how others can participate it, you know, does it  
9   have to be left up to the traditional transmission  
10   providers, I think this third bullet point really  
11   emphasizes that it doesn't need to be that way. That we  
12   support joint ownership of transmission projects in that  
13   development and going with a -- a commonly used term is  
14   anchor tenant.

15           And what we have done with this joint ownership  
16   is very similar to an anchor tenant approach where then  
17   the rest of the capacity is filled with other people who  
18   want to own and meet their needs. And the transmission is  
19   owned as tenants in common, and it allows all of those who  
20   have an interest in transmission. And it could be a  
21   generator, it could be an out-of-state load serving entity  
22   to participate and meet these joint needs, and I think  
23   that certainly is a key element.

24           As I heard the comments by Brad and by Amanda,  
25   when we talk about open season solicitation, all of the

1 transmission in Arizona, all of the new transmission in  
2 Arizona over the last 10 years has gone through an open  
3 season solicitation process. And, obviously, when you  
4 take a look at the transmission that's sited and permitted  
5 and now already built, all of that has been joint  
6 ownership transmission. So I think we have a very  
7 powerful tool in being able to address and move forward in  
8 doing renewable transmission projects.

9           And we would, SRP, do our part. We're not going  
10 to sit on the sidelines on this. We're not going to  
11 invest for a third-party interest just because it might  
12 provide good opportunity, or to make certain that our  
13 needs are met. But through good planning we're going to  
14 make certain that the right transmission projects meet  
15 these multipurpose needs and not focus on a singular use.  
16 I think that's where that robust planning comes into play.  
17 So we identify all of these opportunities and all of these  
18 uses that the transmission can provide.

19           Import/export -- well, let's go back. On the  
20 import/export, again, planning is a key, and we have the  
21 existing regional and subregional planning that will  
22 identify the transmission that will meet our in-state  
23 needs, while at the same time providing the export or  
24 import opportunity.

25           I think all of the utilities here in the state

1 have been working very efficiently and fundamentally sound  
2 in moving all of this forward. We heard about the -- in  
3 Brad's DPV-2 comment of an example of a transmission line  
4 that has an opportunity to provide export opportunities,  
5 while at the same time import and meet an in-state need.

6 SunZia is much the same way. As it's proposed,  
7 it would meet in-state need by moving renewable energy in  
8 southeastern Arizona into central Arizona, while at the  
9 same time providing the opportunity to move renewable  
10 resources from New Mexico into Arizona, or even have any  
11 transfer capability opportunity. But it would meet a lot  
12 of different needs and not be singularly focused on just  
13 one element.

14 A lot of words there for renewable, for a  
15 definition of renewable transmission projects. I know  
16 there's a lot of debate on where we go with this, and SRP  
17 would like to at least put a line in the sand at least as  
18 a starting point. And I know in the proposed federal  
19 legislation they want to go with a lot of ways of  
20 measuring the use of the transmission, and I know in other  
21 states they have done the same thing with renewable  
22 energy.

23 And SRP would advocate for a more broad-based  
24 approach, and we have an example here in quotation: Any  
25 new transmission or transmission upgrade that provides for

1 access to and delivery of renewable energy resources in  
2 Arizona.

3 This is a definition for Arizona. And I noted  
4 there that an up-front designation, let's say, by the  
5 Commission would provide certainty for development. So  
6 it's not proposed to be something that's easy to obtain.  
7 And the Commission would be expected to provide the  
8 characteristics that would be needed to be added to that  
9 definition to meet this hurdle.

10 But the key element is that once that was put in  
11 place, that someone proposing a project that would be  
12 defined as renewable transmission line would demonstrate  
13 how they are going to meet that definition and the  
14 characteristics. And then once it's met, it is so  
15 designated, and it's then not subject to an annual review  
16 saying, are you or are you not?

17 And I put in some reasons why we have concerns if  
18 you try to go to a measurement process. You know, you  
19 need to ask yourself, how are you going to measure the  
20 capacity portion or the energy portion? You're going to  
21 have to ask yourself is it instantaneous value at all  
22 times? Is it a one-time expectation? If you're using  
23 energy hours, are you averaging it over a day? A month?  
24 A year? Is it average over multiple years?

25 And then, of course, you have to ask yourself if



1 you have these measurements on audits, what, then, are you  
2 going to do if for some reason you're out of compliance  
3 for one portion of time? What are those consequences?

4 It introduces certainly a lot of issues, and it's  
5 issues that we don't think -- at least I don't think  
6 necessarily improve the way in which we want to develop  
7 renewable energy.

8 In that next to last bullet, I put a note here  
9 that SRP, when we have financed transmission, we have --  
10 in our history, we used to use taxes and financing. And  
11 so where we have transmission with tax-exempt financing,  
12 we have private-use restrictions on that. And that is a  
13 very high hurdle which we have to deal with on a regular  
14 basis.

15 Because of that, we then started moving towards  
16 not using tax-exempt financing so we wouldn't have these  
17 private-use restrictions. And so as we move forward, we  
18 would not want to see, once a project goes forward,  
19 especially, as I emphasized, it's multiple use and best  
20 use of transmission, of having these limitations of how  
21 you are going to manage us.

22 I think TEP has an example where they have a line  
23 which has two county financings and it has a number of  
24 limitations on it. I don't think that's where we want to  
25 go with transmission as we move forward.

1           And then lastly, Commissioner Mayes, this goes to  
2 some of the comments that you made this morning with  
3 respect to the WREZ process. SRP certainly would not want  
4 to limit its transmission investments only to areas that  
5 are designated as renewable energy zones. As an example,  
6 with the Western Governor's process they don't identify  
7 any renewable energy in Pinal County. Well, SRP happens  
8 to believe that Pinal County is a very good area for  
9 renewable resources, and we would not want to see a  
10 limitation placed on coming here to getting a certificate  
11 because it wasn't going to a designated zone.

12           And then how do we go about prioritizing? Again,  
13 these are the candidate list of elements that we think  
14 would make sense in how we would go about prioritizing  
15 transmission for renewable energy. Certainly, we don't  
16 want to be on a spot basis. We want something that serves  
17 a long-term need and, again, serves multiple purposes.

18           Building transmission to an area which has  
19 multiple resource options, or, as in Palo Verde, an energy  
20 hub which has a lot of access to renewable energy, those  
21 two things really make a lot of sense, and there's a  
22 strong case for doing the -- building transmission.

23           Cost and schedule, I think, is an obvious one.  
24 Certainly, distance from our service territory becomes  
25 one. The further away you go, the more it is. We would

1 like to see the renewables closer to home.

2           What it takes to integrate into our local  
3 transmission system. For SRP, bringing it into the  
4 southeast side is easier and better for us than, say, on  
5 the far northwest side. There are going to be issues  
6 there that are more unique to each of us as we move  
7 forward.

8           Ability to align with partnerships. We don't see  
9 that SRP is going to be out, you know, ground blazing  
10 brand new, large EHV projects across the state. And we  
11 think that our ability to partner with utilities and  
12 others, as we are doing, is an example of how we'll get  
13 things done.

14           If you take a look at the transmission projects  
15 we have, we don't have all of the traditional utility  
16 players participating in these joint ownership  
17 transmission projects. The southeast valley had a number  
18 of players who don't own any transmission participating.  
19 Our involvement with the SunZia project is another unique  
20 example where you have three non-transmission providing  
21 partners in that development. And so I think this is the  
22 role of the ability to put this together in the future of  
23 what we're doing.

24           And then, lastly, the permitting issues. You  
25 know, I mean, each of these will have an issue. The maps

1 that you pointed out certainly are going to have its  
2 elements at play. How much federal is involved? What are  
3 those federal issues going to be? Is state land involved?  
4 How much private is involved? And are we going through  
5 routes that are low sensitive areas or high sensitive  
6 areas? And that would come into our prioritization.

7 With that, I conclude my comments and I would  
8 move on.

9 CHMN. MAYES: Rob, quick question. When you say  
10 on Page 5, that's really a broad definition, it seems to  
11 me. And I understand where you're company is coming from,  
12 but it would seem to me, reading this definition, I mean,  
13 any transmission project that went out and picked up  
14 5 percent of solar would be defined -- could be defined as  
15 a renewable energy transmission project?

16 MR. KONDZIOLKA: Chairman Mayes, that was not my  
17 point on doing that. As I put that in there, such as I  
18 would expect that if we started with something like this,  
19 or that kind of a definition, and then expanded it to  
20 identify the characteristics of what would be required.  
21 And that, I think, is what this workshop would be about,  
22 is what characteristics and how high of a hurdle do you  
23 make for those characteristics would be defined and agreed  
24 upon.

25 And then it would be up to this Commission, then,

1 for transmission developers to come forward with the  
2 projects and show how they meet the definition, how they  
3 meet the characteristics, and it would be up to this  
4 Commission to make that decision as to, yes, you actually  
5 will meet the intent of what we're trying to do or not.  
6 And so it wouldn't be bypassing this Commission in that  
7 sense. Yeah, I didn't want to list all of the  
8 characteristics in here, but I would certainly expect that  
9 that is what would be added to that definition.

10 CHMN. MAYES: Okay.

11 MS. ORMOND: Thanks, Rob. We are now going to  
12 transition to Southwest Transmission cooperative.

13 MR. EVANS: Madam Commissioner and Commissioners  
14 Newman and Stump, my name is Bruce Evans. I'm with  
15 Southwest Transmission Cooperative.

16 We thought that what we would do today is to give  
17 some comments from both Arizona G&T cooperatives. So we  
18 have a representative from AEPCO here, as well as myself  
19 from Southwest Transmission. So I'll go ahead and let  
20 AEPCO go first.

21 MR. BAGGETT: Good evening, Chairman, and  
22 Commissioners. My name is Chris Baggett. I'm the power  
23 services technical administrator with Arizona Electric  
24 Power Cooperative. I'm primarily just responsible for  
25 administering the cooperative's renewable energy program.

1           And today, I'm going to lead off talking about  
2 AEPCO's procurement processes, the policies related to  
3 those, and kind of give an overview of their overall  
4 resource allocation.

5           First, just a little bit about AEPCO. As you all  
6 are probably aware, cooperatives are not, by their very  
7 nature, an integrated utility. They separate the  
8 functions usually. At least in our case, the generation  
9 and transmission functions are separated, as well as the  
10 distribution of the energy to the end user.

11           And AEPCO is a generation cooperative that was  
12 formed under the generation transmission cooperative laws  
13 of the state of Arizona. They are a generation company  
14 only. They have no retail service areas to speak of, and  
15 their energy is provided through wholesale power  
16 agreements to distribution cooperatives throughout  
17 Arizona, six total, and there's one over in California.

18           Just kind of a brief overview of how their  
19 resource allocation is currently divided. Coal represents  
20 the predominant allocation of where the resources come  
21 from. They do have some natural gas peaking units. We  
22 purchase hydro power from Western Area Power  
23 Administration. We do purchase a little bit of power, and  
24 then we have the cooperatives' renewable program in the  
25 portfolio we've developed through that so far.

1           Looking at 2015, just to look ahead, still  
2 predominantly coal, but that's the first year that we  
3 would likely need additional generation. The balance of  
4 the power that we need in 2015 would come from a unit that  
5 we presume would be natural gas, although it hasn't been  
6 determined 100 percent yet, and through our energy  
7 efficiency and through our renewable programs.

8           And just as a point of clarification, the  
9 renewables portion there does represent 5 percent of the  
10 retail energy from the four participating cooperatives  
11 that we administer the program for. We have one, Sulphur  
12 Springs Valley Electric Cooperative, their renewable --  
13 their resources are not included in that percentage right  
14 now. So that just represents the 5 percent from the four  
15 participating cooperatives that we do administer the  
16 program for.

17           COM. NEWMAN: Madam Chair, just a question. I  
18 whispered into the Madam Chair's ear, and I wasn't sure if  
19 I should ask this question now.

20           But, of course, I'm very familiar with AEPCO, and  
21 I -- if you can go back to that previous chart, the  
22 renewables, 2008, one percent. I thought that there was  
23 some sort of chart and monitoring process for renewables  
24 to bump up per year. And I know you mentioned Sulphur  
25 Springs, which has a more robust renewable energy program,

1 but it still doesn't -- those numbers still don't get up  
2 to meeting the Renewable Energy Standard.

3 Can you explain that.

4 MR. BAGGETT: Well, absolutely. And what you're  
5 referring to is the standards as represented in Sections  
6 1804 and 1805 of the renewable energy rules. And, you  
7 know, although the cooperatives are installing renewables  
8 as quickly as they can, and their programs are growing  
9 substantially over the last couple of years, they still  
10 are not at those mandates just yet.

11 I think the Commission has recognized the  
12 challenges that cooperatives do face in trying to develop  
13 those resources. And in all honesty, they're probably a  
14 little slow getting it off the ground in the way some of  
15 the other utilities are, but they are putting the  
16 resources on the ground in good faith and developing them,  
17 and I think at some point we will be approaching, if not  
18 exceeding, the renewable energy rules as they're outlined.

19 COM. NEWMAN: Just a friendly rejoinder. I'm a  
20 Cochise County boy. I certainly understand the  
21 intricacies of delivering power in rural Arizona, and  
22 cooperatives feed approximately 200,000 customers.  
23 However, just I mentioned this morning -- I don't know if  
24 you were here -- I have met with over 50 entrepreneurs  
25 that would like to provide power. We're talking here



1 about transmission.

2           There is transmission in Cochise County, and  
3 you'll be talking more about it, but one of the indices of  
4 whether we're going to be able to get there or not is the  
5 openness of the companies to getting there. And external  
6 cap and trade may take a couple of years to get through  
7 Congress, but I would say it's basically a fait accompli  
8 that some program will get there. And with that  
9 80 percent dependence on coal, you know, people in rural  
10 Arizona are going to be looking at higher rates, so that  
11 the time is now to try to do that.

12           And we would hope that the rural cooperatives and  
13 AEPCO be involved in building transmission for Cochise  
14 County projects. In fact, I was just down in Pima County  
15 at the U of A on Friday where I met with some Pima County  
16 officials who were trying to have a consortium of Santa  
17 Cruz County folks, Cochise County folks, and Pima County  
18 folks that might be able to fit in some plan with Trico  
19 and Sulphur Springs and your company to get something  
20 going. That was a rather big -- you know, it just sticks  
21 out as, you know, you guys are not going to be able to  
22 make it. And I'm telling people I'm trying to get  
23 alternatives all over the state. I know people in Cochise  
24 County would like to see that done, too.

25           So just a friendly rejoinder. Any comments?

1 MR. BAGGETT: Commissioner Mayes, Commissioner  
2 Newman, absolutely. And what you see in 2015, it is  
3 projected that the cooperatives will be in line with the  
4 main leads. That 3 percent does represent 5 percent of  
5 the retail sales of four of our electric cooperatives.  
6 Keep in mind that, you know, this is AEPCO's overall  
7 portfolio mix that's used to provide energy to all of  
8 their members, which includes six cooperatives as well as  
9 other Class B and C members.

10 So the renewable program we administer is on  
11 behalf of just a small portion. That's why it looks  
12 smaller. But we're counting on the cooperatives'  
13 renewable energy programs and their energy efficiency  
14 programs that are under development now to offset our  
15 future resource needs.

16 COM. NEWMAN: And if anything now -- Madam  
17 Chairman, this would be my last comment -- you know, it's  
18 true that everything is -- to Mr. K from SRP as well, he  
19 announced that we can take advantage of some of this  
20 federal money right now to get the transmission lines in  
21 place. That people want to come, and we just need some  
22 creative cooperation between the Commission and the  
23 distribution and the new energy sector that wants to come  
24 here. You understand that?

25 MR. BAGGETT: Uh-huh, and absolutely. You know,

1 we get a lot of interest from -- because we predominantly  
2 serve Cochise County, and we do get a lot of interest from  
3 renewable energy developers in that area that are  
4 interested in siting large projects. And we're working  
5 with them and working through the process of trying to  
6 help them get those projects going.

7 COM. NEWMAN: Thank you.

8 MR. BAGGETT: This is a little bit about AEPCO's  
9 procurement process as it relates to renewables. We first  
10 determine our resource need, and we do that by analyzing  
11 the retail sales of the four distribution cooperatives  
12 that we have the renewable energy program for, determine  
13 what that renewable energy need is.

14 From there, we want to give priority to the  
15 distributed renewable resources that we have in our  
16 service areas and provide funding to those projects first.  
17 We feel like that's the best place to spend those monies.

18 From there, from the balance of the resources  
19 that we need, we move to an open -- basically an RFP  
20 process where we open it up to resource developers to  
21 solicit project proposals, and we go into an evaluation of  
22 those proposals. It's probably very standard, and we  
23 evaluate them on a least cost basis, but we also like to  
24 give priority to the projects that are serving cooperative  
25 service areas, that serve our cooperative members, and

1 provide the largest community benefit.

2 Our resource procurement, in general, of any  
3 resource, whether it be renewable or otherwise, is  
4 strictly guided by the Rural Utility Service. They're one  
5 of the companies that provide us financing. And they  
6 require that we follow a very strict competitive  
7 procurement process as it relates to acquiring resources,  
8 and it's based on a least cost model.

9 Okay. And at this time I'm going to transition  
10 over to my colleague Bruce Evans with Southwest  
11 Transmission, and he's going to go into discussing the  
12 transmission issues and policies relate, I believe.

13 MR. EVANS: Thank you. We are also a nonprofit  
14 corporation organized under the G&T cooperative laws of  
15 the state. Interestingly enough, for those that don't  
16 know the history, up until eight years ago, we were all  
17 one company and we were all Arizona Electric Power  
18 Cooperative. But in 2001, we did restructure in the hopes  
19 of meeting what was then the retail competition rules that  
20 were being put through for the state.

21 And so AEPCO sold all of its transmission assets,  
22 if you will, to Southwest Transmission Cooperative. And  
23 so we are, therefore, a wires company only. Similar to  
24 AEPCO, we do not have a retail service area. We do have  
25 wholesale transmission agreements with the six

1 distribution cooperatives, five, again, whom are in the  
2 state of Arizona.

3 We are also an RUS borrower, RUS being the  
4 successor organization to the REA, the old Rural  
5 Electrification Administration. We do follow the rules  
6 and regulations for what we call our work plan and loan  
7 submittals. And I guess I need to talk about this a  
8 little bit as I go through this, that once we get projects  
9 into a work plan that we would like to build, we have an  
10 operating committee of the six distribution cooperatives  
11 that will review that work plan.

12 They have been enjoined upon by our board of  
13 directors to do that, because those individuals that are  
14 on that operating committee are the technical folks, and  
15 so they provide a review of that work plan. And then we  
16 submit that to our board of directors, which is very  
17 similar to what SRP just talked about in that they have  
18 things that they need to send through to their board of  
19 directors.

20 Before we can submit anything to RUS, we need, of  
21 course, to make sure that everything gets past our board  
22 of directors. Now, our board of directors is made up of  
23 board of directors from our member cooperatives. In other  
24 words, they choose individuals off of their boards to be  
25 on our boards. Once we get the approval from our board of

1 directors, we can then begin to assemble the loan package.

2           And I've got up there in that first bullet that  
3 generally we look about 18 months to get an approval for  
4 that loan package. Pretty much the time frame that we  
5 have, you know, talking about timing for us to do  
6 projects, is from the time we start putting that work plan  
7 together to getting approval, to getting RUS approval, is  
8 about 32 months.

9           Now, we have been fortunate enough in that a lot  
10 of projects that we have done with our high voltage  
11 transmission system, we have been able to fairly well get  
12 these projects into that 32-month time frame. However, if  
13 we get involved with other larger HV or EHV projects  
14 requiring line siting, then that time frame will likely go  
15 greater than the 32 months.

16           Basically, the RUS regulations are is that we  
17 really can't be placing transmission out there without a  
18 need. Whenever we develop transmission or want to develop  
19 transmission, it's basically from a bottoms-up approach,  
20 if you will. We receive information on our -- on load  
21 forecast from our six member cooperatives, and we  
22 integrate that and study it as to what we need to do with  
23 regards to building transmission. So we have to  
24 demonstrate a need, and that's been talked about before  
25 here today, before we can even begin to put this in front

1 of our board to build.

2           Additionally, we do have kind of an inability, if  
3 you will, to have funding of transmission for what we call  
4 the non-REA Act beneficiaries. The REA Act being, of  
5 course, the Rural Electrification Act of 1936 where there  
6 were certain individuals that were set aside to be able to  
7 obtain RUS or REA funding: The cooperatives; there are  
8 some electric districts that can obtain that funding;  
9 There are tribal entities that can obtain that funding and  
10 so forth.

11           And so if we are going to have an entity that  
12 wants to have us fund transmission that is not an REA act  
13 beneficiary, then we have to go through what we call a  
14 lien accommodation. In other words, all of the assets of  
15 transmission that we have are basically collateral to  
16 these loans that we owe to the RUS.

17           And so what would have to happen in a sense --  
18 and I'm not really an expert on this. I know just enough  
19 about this stuff to be dangerous, because these  
20 regulations are very, very -- well, there's just a lot of  
21 them, I should say. A lot of material to cover, a lot of  
22 stuff that I'm not completely aware of.

23           But basically, what we would have to do is we  
24 would have to carve out those portions of the  
25 transmission, if you will, that would be for a non-REA act

1 beneficiary, if you will. And that would have to become  
2 completely separate from the assets from which would  
3 continue to be the collateral for the loans that we would  
4 be expecting to get from RUS.

5 COM. NEWMAN: Madam Chair is not here, so I'm  
6 going to take my own prerogative.

7 Does that mean when we're talking about that  
8 intrastate versus export market that you're severely  
9 inhibited to do that exporting because of the arcane rules  
10 of REA?

11 MR. EVANS: Yes, Commissioner Newman, perhaps we  
12 would be, because we would have to demonstrate a need for  
13 that project in order to benefit the cooperative members.

14 COM. NEWMAN: I'm going to speculate on the  
15 potential need. For example, cap and trade costs, high  
16 dependence on coal. We need to get the bottom line best  
17 cost for your customer if in the future -- right now, you  
18 know, there's a question as to whether solar is cheaper or  
19 not. It will get more cheaper. But if it gets to the  
20 point that it is cheaper, and certainly cheaper than coal  
21 with the extra taxation on it, then you might be able to  
22 get to those rules. And I'm sure somebody is looking at  
23 this nationally for the rural coops as well.

24 MR. EVANS: Yes. RUS is actually looking at  
25 this. We know that they are very, very much aware of



1 these issues. They will probably issue some additional  
2 regulations with regards to that. But, you know, we're  
3 not adverse to having the renewables, obviously, but right  
4 now, as it stands, we've got to follow through with those  
5 guidelines.

6 COM. NEWMAN: It's good that you brought up that  
7 point, because that's another thing that we might look at  
8 when we talk to our congressional delegation, perhaps  
9 Mr. Waxman and other people.

10 MR. EVANS: I will say that we are very much in  
11 support of joint ownership of transmission projects  
12 similar to what SRP has said today. We agree that each  
13 party should be responsible for its pro rata share as  
14 discussed by Salt River Project.

15 In fact, we have done that. We have gotten  
16 involved with some projects where Salt River Project is  
17 the project sponsor such as the Southeast Valley project.  
18 But as we were going through that, we did have to have  
19 some kind of a rejoinder, I guess, if you will, put into  
20 the documents that we would be observing RUS procedures.  
21 But it was -- everything worked out. We were able to get  
22 some approvals for that and it proved to be very  
23 successful for us. So we have had a history of at least  
24 going down that path to where we are getting involved in  
25 some major transmission projects with others.

1           Go ahead and hit the next one there.

2           We do have a concern, however, that because we  
3 are rural, we do have a small customer base. We have less  
4 consumers per mile, obviously, than the larger utilities  
5 do. And so, you know, our densities are such that, you  
6 know, we want to make sure that we have the best economic  
7 value, if you will, for our member cooperatives.

8           Like SRP, we would very much like for these to be  
9 closer to our load centers. And, you know, anything that  
10 we do down there, of course, is -- you know, the costs are  
11 going to be higher for our consumers, because we just  
12 don't have the densities that the others have.

13           With regards to the prioritization of projects,  
14 we would like to make sure that we would be considering  
15 cost, size of project, and also location. Obviously, the  
16 location to our member cooperatives, the closer would be  
17 the better for the economic benefit, if you will.

18           And so we right now, you know, our access to the  
19 market hubs are limited. I'm sure that in the future  
20 we'll see additional abilities to have access to that, and  
21 hope that we can work towards getting more access to those  
22 hubs for our customers.

23           MR. BAGGETT: With that, I think we can take  
24 questions.

25           MR. EVANS: I think they were going to hold on.

1 MR. BAGGETT: Oh, okay.

2 MS. ORMOND: Thank you. We're going to  
3 transition to our last utility presentation, which is  
4 Tucson Electric Power.

5 (A brief discussion was held off the record.)

6 MS. ORMOND: Actually, we're going to have a  
7 short break for 10 minutes.

8 (A recess was taken from 3:28 p.m. to 3:42 p.m.)

9 MS. ORMOND: Ladies and gentlemen, we're going to  
10 get started again.

11 So our last formal presentation of the day -- and  
12 I greatly appreciate everybody's attendance and patience  
13 as we've gotten through all of this material. It's been a  
14 tremendous amount of material -- is from Tucson Electric  
15 Power and UniSource, and then we're going to open it up  
16 for other comments that people might want to make. If we  
17 have no one that wants to make any specific comments, then  
18 I'm going to start throwing questions out much along the  
19 lines that the utilities have been responding to and see  
20 if we can solicit some of your opinions.

21 So Ron Belval.

22 MR. BELVAL: Okay. Last, but certainly not least.

23 MS. ORMOND: I'm supposed to say that.

24 MR. BELVAL: Okay. I am going to go through this  
25 and try not to be repetitive, not try to go over many of

1 the things that my colleagues went over prior to this,  
2 except to the extent that we could give it a different  
3 perspective.

4 In terms of the timing, I think Amanda covered  
5 that very well, that transmission typically takes longer  
6 than a generation project to complete, so you have  
7 coordinating those very important.

8 And that locationally-constrained projects,  
9 because of the fact that the energy projects are sited  
10 where the wind blows and where the sun shines and not  
11 necessarily where the transmission and connections are,  
12 they pose more of a challenge.

13 I don't know that -- APS covered this very well.  
14 I'm talking about the timing in terms of transmission  
15 line, the risk of transmission being too early. Nobody  
16 wants to be wasteful and it's economically inefficient,  
17 and you end up leaving dollars on the table if you don't  
18 have any power to transmit and it just doesn't make sense.  
19 However, you don't necessarily have control over that.

20 On the other hand, the risk of transmission being  
21 too late is really an important consideration because it  
22 could have an impact on the renewable project. If the  
23 project is there and there's no transmission to take the  
24 output, that's economically inefficient.

25 Also, you never know what the renewable

1 developers, you know, have in their process, but  
2 transmission coming too late could also be a barrier to a  
3 renewable. They might decide that if the transmission is  
4 not going to be there, they will look elsewhere. But the  
5 big issue that's typical is that you just end up with a  
6 stranded generation cost, which is just economically  
7 inefficient.

8           What can we do about that? There was some --  
9 quite an amount of discussion about that part of the  
10 process. One of the things that we can do, I think Rob  
11 mentioned it, one is to reserve the corridors in advance  
12 of the development, do what you can to do the permitting  
13 in advance, and to actually accelerate right-of-way  
14 acquisition. All of this would, of course, require that  
15 by the time you're done building a project that all of the  
16 financial matters have been taken care of, it's been  
17 permitted, and whoever builds the project will be able to  
18 get a return on their investment.

19           In terms of who pays, renewables is a new world  
20 for the utilities. I know we've been thinking about it  
21 for some time, and we have been receiving renewable  
22 interconnection requests over the past couple of years,  
23 but it's still a relatively new concept.

24           And the cost recovery is very important, and I'll  
25 just cover a few of the alternatives that we've been

1 thinking about. First of all, if the project happens to  
2 be in an area where there's a single transmission  
3 provider, and that transmission provider decides to build  
4 a project on its own, then one of the mechanisms is the  
5 provider would be paying for the full cost of that  
6 project. And so the native load customers of that  
7 transmission provider would be the retail customers, and  
8 they would be bearing the full cost.

9 In addition to that, there could be some network  
10 customers that are treated the same as native customers  
11 served by that transmission provider, and others that may  
12 be taking service through a point-to-point tariff.

13 Another alternative -- before I go to that,  
14 actually, though, Rob again mentioned that a joint project  
15 is another option that we could put in areas where there's  
16 a project that multiple utilities or transmission  
17 providers could develop. That it would be a joint project  
18 and the participants would pay their pro rata share.

19 The other option is for the project developer and  
20 it could be teamed up with a transmission project  
21 developer, or be doing the entire project themselves. In  
22 that case, the project developer would certainly be  
23 looking for a PPA in order for that to be cost effective.

24 And then the other option would be to look at  
25 considering the fact that the benefits of renewables are

1 more global in nature, you can make that as broad as you  
2 wish, and then some of the benefits, obviously, are their  
3 environmental benefits.

4           So I think also Ed covered the transmission  
5 authorities quite well. And I would refer you back to  
6 that part of the presentation is that the state could play  
7 a role in developing a transmission authority and look at  
8 other models such as the Tehachapi project.

9           Looking at Arizona projects versus export, it's  
10 very clear to us that the ACC would like us to focus on  
11 developing renewable generation projects within Arizona  
12 and, to the extent possible, utilize that energy within  
13 Arizona.

14           So with that, our goal is to identify those  
15 projects. And I just took a little bit different  
16 perspective than my colleagues ahead of me is that the  
17 project really isn't -- may not necessarily be a single  
18 line. They could be a system reinforcement that relieves  
19 congestion from where the renewable resources are sited  
20 and there just simply may not be quite enough transmission  
21 capacity between the site or the location of those  
22 resources to where the customers are for that resource.

23           So I just say that basically the RTPs relieve  
24 congestion between the resource and the load, and to that  
25 extent they could provide additional benefits.

1           Export, transmission for export would, by their  
2 nature, be larger than the projects that would be internal  
3 to -- and I'll just use, say, Arizona specifically. You  
4 could liken the projects that would typically be  
5 identified by the transmission providers within Arizona as  
6 a renewable project collector system. And it would just  
7 be that amount of transmission that would be required to  
8 interconnect to renewable resources, with some portion of  
9 the backbone network within Arizona that the transmission  
10 providers and load serving entities may have capacity  
11 rights on, so that they could go from the resource,  
12 through the collector system, to the backbone system, and  
13 get delivered to the customers within Arizona.

14           Whereas, a project to export renewables from  
15 inside of Arizona could be likened to one that would  
16 interconnect the collector systems and integrate with the  
17 transmission networks such as it could transfer that  
18 output outside of the borders. Because of that, the  
19 larger projects, they would take -- typically be longer  
20 lead time, take longer to permit and longer to build. On  
21 the other hand, they could also help to reduce the  
22 financial risk.

23           Rob was, again, mentioning multiple use. This  
24 being able to deliver the output and the resources to  
25 customers within the state of Arizona would be one



1 function, and then the additional capacity with a network  
2 that enhances that collector system would provide some  
3 additional benefit.

4 And finally, having the ability to export power  
5 from the renewable resources outside of the state. To the  
6 extent that the resources within Arizona are, in fact,  
7 ample, and if we can expand those white areas in the maps  
8 that we showed earlier this morning, it would require a  
9 much greater market to take advantage of that, but then  
10 again, the renewables provide global benefit.

11 And Tom, I think I have the definition that you  
12 need for renewable transmission project. It's pretty  
13 simple. I don't know why you have had such trouble with  
14 this.

15 MR. WRAY: Hey, Ron? Ron, brevity is a key to  
16 omission.

17 MR. BELVAL: Sorry. I lost my head for a minute  
18 there.

19 Anyway, the primary intent, and the Commission  
20 has been very clear about this, is that we're looking for  
21 resources, renewable resources within Arizona. And to the  
22 extent possible, transmit the output of those resources to  
23 entities within Arizona. However, we do know, or at least  
24 we believe at this point that there's ample renewable  
25 capacity that it could also be transmitted outside, and so

1 there's some synergies there.

2 But the benefits, again, this relates to the  
3 multiple use that Rob was talking about, which is to not  
4 only expect to utilize the renewable transmission projects  
5 for transmitting renewable resources, but also use them  
6 for transmitting conventional resources, and use them for  
7 the purpose of increasing the load serving capability  
8 within the load pockets. Those are the resources and the  
9 transmission projects that we have identified in our  
10 10-year transmission plans that are submitted to the ACC  
11 every year. They improve system reliability, and they  
12 reduce congestion, again, that would -- being able to  
13 allow for the use of those facilities for other purposes,  
14 in addition to transmitting renewables, makes a lot of  
15 sense.

16 And then, finally, I'm not going to belabor this.  
17 This has been really covered quite a bit. But clearly  
18 when we prioritize renewable transmission projects, we  
19 don't have a great deal of those to consider at this point  
20 in time. Hopefully, after this process moves beyond this  
21 workshop, we'll have a better idea of which projects to  
22 really focus on. We do have some good ideas, but we need  
23 more, is that clearly the cost of the projects makes a lot  
24 of difference in the size. Size and location, size and  
25 location actually relate to the cost.

1 But just as a simple example, in looking up in  
2 Mohave County, we have noted that there have been a number  
3 of interconnection requests up there, and pretty ample,  
4 actually. The amount of capacity could be in the range of  
5 500 to well over 1,000 megawatts.

6 And that while TEP or UniSource doesn't own most  
7 of the system up there, Western does, that there are a few  
8 projects that could increase the chance for the capability  
9 of the Western system that would help to deliver the  
10 output of these renewables to Parker-Davis customers. So  
11 that happens to be about the size and order of magnitude  
12 and location such that it appears that a transmission  
13 project up there could make sense.

14 And that's all I have.

15 MS. ORMOND: Excellent. Thank you, Ron.

16 So we asked everybody to hold questions for all  
17 of the panelists from the utilities. So I wanted to open  
18 it up and see whether there was any specific questions for  
19 the utility presentations?

20 And if not, my next question is going to be, is  
21 there anybody that would like to make comments to the  
22 group on anything that you have heard today?

23 I think they can use this mic or that mic,  
24 whatever you're comfortable with. If you do come up to  
25 this mic at the podium or the lectern, you need to press

1 the button to make sure that it turns green so we can hear  
2 you, and please identify yourself.

3 MR. SIMMONS: Madam Chairman, Commissioner  
4 Newman, thank you very much for this interesting meeting.  
5 I'm Joe Simmons from University of Arizona. And I'm also  
6 the director of the Arizona Research Institute For Solar  
7 Energy, and we look at all forms of applications of solar  
8 energy.

9 One of the reasons I'm here today is to really  
10 bring up an issue which seems to be very interesting all  
11 around the world, except maybe in Arizona, or getting more  
12 attention than Arizona, and that's the issue of energy  
13 storage. It turns out that energy storage can have a lot  
14 of value in the energy equation.

15 One of the areas that I think is important, just  
16 for example, is integration with energy generation. If we  
17 can integrate energy generation and storage together, we  
18 have a better mix of -- a better ability to distribute  
19 energy at the right time, so better load matching, we have  
20 a more versatile source of energy, and we can do  
21 regulation on the line.

22 We can also integrate energy storage with  
23 transmission. If we do this, then we have more value for  
24 our transmitted energy because we can sell it at the right  
25 time when the demand is high. We can also make better use

1 of our transmission lines by continuing to have them be  
2 loaded all of the time instead of reaching capacities at  
3 4:00 in the afternoon, and then meeting the load capacity  
4 the rest of the day, or the rest of the season, or the  
5 rest of the month. So energy storage has a value there.

6           There's also the possibility of doing energy  
7 arbitrage where you can generate energy at times when it's  
8 not too expensive, and then do arbitrage through better  
9 times when there's a high load demand. You can also do  
10 seasonal arbitrage, which can be very valuable, because in  
11 renewable energy, for example, in solar energy we create a  
12 lot of energy in spring and not enough in the summer to  
13 meet the summer demand. It actually -- the amount of  
14 energy generated during the year maximizes in the spring  
15 and decreases in the summer. And by being able to store  
16 the excess energy in the spring and using it in the  
17 summer, you can again have a better delivery of energy and  
18 also reduce cost.

19           Finally, there's avoided costs. Spinning  
20 reserves, overdesign of a system in order to handle  
21 variations, unexpected variations, can be handled by a  
22 really good energy storage system.

23           So what do we need? We need to do a technology  
24 evaluation, because it takes a large mix of different  
25 technologies to cover short times, medium times, and very

1 long times like seasonal. We also need to do economic and  
2 benefit analysis, and we need a demonstration project to  
3 see how this really works as an integrated system.

4 I'm happy to say that in the last few months, my  
5 group has worked with the utilities to form a consortium,  
6 and we're on the verge of forming this. And this  
7 consortium involves a number of members: APS, TEP, SRP,  
8 WAPA, WECC, AEPCO, SunZia, and others. So we're very  
9 happy to say that we're moving forward in this area and  
10 exploring how energy storage could be integrated in the  
11 entire energy delivery picture.

12 COM. NEWMAN: Madam Chairman.

13 To your comments, I agree with you that storage  
14 is very important when it comes to solar development, and  
15 thank you for coming from Tucson today.

16 What I have heard in terms of price, that many of  
17 the companies are experimenting with molten salt. In  
18 fact, the \$1 billion potential project that was announced  
19 today was also another molten salt model.

20 I wanted you to speak to molten salt as a  
21 potential technology, and I also want you to speak to the  
22 downside of it, which I have heard that it's very  
23 expensive now, when you're siting projects now, where even  
24 going through the PPAs with the companies with regard to  
25 storage, it is more difficult to find the capitalization

1 for storage with the solar concentrators because of  
2 costs -- that cost is so high.

3 So your point is very well-taken that storage is  
4 very important, but if you can speak to both of these  
5 issues.

6 MR. SIMMONS: Sure. Thank you, yes. Well, there  
7 are several approaches to doing energy storage. There's  
8 electronic -- electrical energy storage, batteries, which  
9 are very expensive. Super capacitors, which are very  
10 expensive, but their prices are coming down. Then there's  
11 compressed air energy storage, which has a variety of  
12 costs depending on which systems you work with. And then,  
13 finally, molten salts.

14 Molten salts are very interesting in that they  
15 use -- when you create energy from the sun, the cheapest  
16 form of energy you can create is heat, heat energy. And  
17 so they use the easiest energy that can be formed, which  
18 is heat energy, and then they store it for long periods of  
19 time.

20 The problem with molten salts is that they have a  
21 very high melting temperature. And one of the problems  
22 that we've been told recently does take place is that if  
23 you have a lot of -- several days of bad weather, you need  
24 to actually provide additional energy into the system to  
25 keep the salt hot. And when it doesn't -- if this is not

1 realized, there are some systems that will actually break  
2 down and have to be replaced.

3           So the costs can be very high. The risk is  
4 somewhat there. But on the other hand, a properly working  
5 molten salt system could give you four to six extra hours  
6 of operation past sunset, so it's a very desirable system.  
7 But it doesn't give you nighttime operation and it doesn't  
8 give you arbitrage over several days or even seasonal  
9 arbitrage.

10           When you want to look for seasonal arbitrage,  
11 really, compressed air storage is the one technology that  
12 can be turned to. But it hasn't been tested enough to be  
13 able to be determined -- well, to have a price which can  
14 be easily determined, and this is one of the things that  
15 we would like to do with our consortium.

16           COM. NEWMAN: Okay. And just a repeat of what I  
17 said before, and you substantiated some of what I've been  
18 learning. It's hard to be an expert in everything, but  
19 I'm trying to.

20           But I have heard that this is even a problem for  
21 the IOUs to come to terms with some of the solar projects  
22 because of the extra cost involved with that, that adds to  
23 the price of the kilowatt hours.

24           So what you're saying is very, very well-taken.  
25 However, there are companies right now who are in other



1 states that are taking advantage of solar concentrator  
2 procedures, without storage even, because -- probably  
3 because what you're saying is true that we don't have this  
4 science down perfectly yet with regard to storage.

5 But it is possible for PPAs to be signed even  
6 without storage, but I guess that lowers the utility of  
7 building to begin with, but it might -- it might get the  
8 project off the ground quicker because it costs less money  
9 up-front.

10 MR. SIMMONS: Yes, thank you, Commissioner  
11 Newman. As long as the amount of renewable energy which  
12 is added to the grid is low, then the utilities have a way  
13 of handling variation. But as this number gets very high,  
14 then they can still handle the variation, but the cost  
15 becomes much larger, and at some point there's a trade-off  
16 where storage becomes economical.

17 And really, to test it, you need to build a  
18 demonstration project, and this is one of the things that  
19 we're trying to do right now. I'm happy to announce that  
20 the federal government agrees with us, and they just put  
21 out a draft RFP for a demonstration project for storage,  
22 and we will be competing for that.

23 COM. NEWMAN: Thank you very much.

24 MR. SIMMONS: Thank you.

25 MS. ORMOND: Thank you, Dr. Simmons.

1           Anyone else?

2           Jim.

3           MR. CHARTERS: Jim charters. Western States  
4 Energy Solutions. My clients in New Mexico, my wind  
5 clients -- sorry, Commissioners. I'm not used to this  
6 sort of thing.

7           My clients in New Mexico have a problem with what  
8 they call clustering. What we have is any individual  
9 developer has, say, a 130-megawatt plant, but it will not  
10 justify a large line. However, their immediate neighbor  
11 in the pocket, or whatever, will have another 130 or  
12 whatever. And when you start combining those up, then you  
13 can justify a single line.

14           This clustering is permitted in the FERC for the  
15 utilities. However, they also take a large risk in  
16 clustering these people together because they cannot  
17 differentiate one to the other. So if they do it, they  
18 have to do it in such a way that you all come and you get  
19 the other things that we're talking about here in terms of  
20 joining in on a line.

21           The other item that I have is many of the  
22 renewable zones that we've been studying in ARRTIS,  
23 et cetera, seem to be close to Western Area Power  
24 Administration lines. These lines are currently booked.  
25 That is to say they have -- transmission has been bought

1 on them and it's full time.

2           These lines can be upgraded, and a lot of people  
3 have submitted statements of interest to Western as part  
4 of their newfound ability to borrow and have suggested  
5 that all manner of lines in Western's territory be  
6 upgraded. If that were -- if they were upgraded, they  
7 would be able to sell that wheeling or use of those lines  
8 such that they could actually bring out all of those  
9 renewable energies onto those lines.

10           Western cannot jointly own with other utilities.  
11 However, there are ways to interpret that that have been  
12 used repeatedly, and Mead/Phoenix is a good example of  
13 that where their ownership title is held by somebody else,  
14 and they have their own rights.

15           I would suggest to you that consideration of  
16 these possible solutions is also within the bounds here.  
17 And that the utilities that joined in with Western like  
18 they have been in the past, could be in -- their  
19 financials could be taken care of.

20           That's all I have. Thank you very much, ma'am.

21           MR. GALATI: Hi, my name is Scott Galati. I'm a  
22 consultant for Solar Reserve.

23           So I wanted to address a couple of things real  
24 quickly on the issue of storage. I'm certainly not an  
25 expert on this and didn't come here to talk about storage,

1 but we would be happy to come back to the Commission and  
2 explain our storage technology, which we believe that --  
3 we use molten salt, and we don't need any additional  
4 energy used to keep the salt hot.

5           It's been demonstrated at the Solar Two project  
6 in California with a Department of Energy grant. The  
7 technology was developed by Rocketdyne, and we have  
8 several projects that we're looking forward to working  
9 with you here in Arizona.

10           What I really did come here to tell you, though,  
11 is, I think with the two Commissioners, what can you do to  
12 actually help solar developers, help renewable energy,  
13 help renewable energy transmission.

14           We're doing work in California as well and in  
15 Nevada. And all of the western states are struggling with  
16 the same thing, and that is the chicken-and-the-egg  
17 problem that we've all talked about. And here is what I  
18 would like to challenge you.

19           I really recommend -- I think all three utilities  
20 recommended it -- that you designate some transmission  
21 corridors and you permit them. Striving for the perfect  
22 transmission line, striving for the perfect corridor,  
23 while if we had a lot of time that would be great, but I  
24 tell you what. We developers out there, we would be happy  
25 with three good ones instead of one perfect one. So we

1 would really urge you to start the permitting process with  
2 corridors that make sense, even though they might not be  
3 the perfect corridor if you had 10 years to plan it.

4 MS. ORMOND: Sir, just pass the microphone on.

5 MR. DAVIS: For the record, Madam Chairman, my  
6 name is Alan Davis, A-l-a-n. I'm with TransCanada Chinook  
7 and Zephyr power transmission line projects.

8 I wasn't intending to say something today, but I  
9 heard our name tossed out several times in this  
10 conversation, and I just wanted to bring a slightly  
11 different perspective to this discussion. And that  
12 perspective is that of a merchant, and what is the role of  
13 a merchant in terms of bringing renewables to market.

14 In this case, I think the role that we see and  
15 that TransCanada sees in the west is doing what utilities  
16 traditionally can't do, which is build outside of their  
17 service territory. So our projects have the possibility  
18 or capability of bringing 6,000 megawatts of wind into the  
19 Desert Southwest.

20 I think I heard the question today earlier with  
21 how can you get out of El Dorado Valley? Well, starting  
22 on Wednesday in Las Vegas, we're beginning our process to  
23 have that conversation with our regional planning review  
24 process. But one of the ways that makes a lot of sense to  
25 take the wind out of that El Dorado Valley is to backhaul

1 it into Arizona, and there's at least 1,000 megawatts, we  
2 think, of unused capacity west to east that might be  
3 perfect for that.

4 In addition, utilities and the Commission might  
5 look at building to the El Dorado Valley rather than  
6 building to Arizona -- or excuse me -- to Wyoming or  
7 Montana to get the wind, and it's an incremental  
8 investment as opposed to a total investment.

9 So I guess to bring this to a close, what I would  
10 say to the Commission is don't take the ability to import  
11 renewables. I think the chart earlier today about how  
12 wind and solar might shape each other is very important.  
13 There's a lot of opportunities for renewable on renewable  
14 firming. There's a lot of opportunities for using unused  
15 capacity in Arizona to help firm wind. There's a lot of  
16 optimization opportunities that are there if you look at  
17 the bigger west in terms of the transmission picture.

18 So I would just urge you to keep import lines and  
19 merchant lines as part of your mix as you go forward with  
20 this process.

21 CHMN. MAYES: Mr. Davis, you say you think  
22 there's 1,000 megawatts of unused capacity west to east on  
23 which line or lines?

24 MR. DAVIS: There's lines into the El Dorado  
25 Valley from Phoenix that can backhaul that capacity. I'm

1 not the transmission expert, but I know that -- we know  
2 they're there, and we think there's roughly 1,000  
3 megawatts.

4 MR. ALBERT: I'll chime in just a little bit,  
5 Brad Albert from APS.

6 We talked about it a little bit earlier today  
7 about the Mead to Phoenix transmission line where APS, at  
8 least, has some unused capacity in that line, which will  
9 increase as one of our contracts rolls off. That is what  
10 he's referring to, because part of that is the Marketplace  
11 substation, which is actually up there in the El Dorado  
12 Valley that he's referring to.

13 CHMN. MAYES: You were referencing that line as a  
14 way to get renewables from Mohave County into Arizona. He  
15 is suggesting that we should use it to bring wind from  
16 which state? Wyoming into --

17 MR. DAVIS: And Montana is where -- it's all  
18 renewables. I guess --

19 CHMN. MAYES: Sure, I understand that. But, you  
20 know, those are two different proposals, let's put it that  
21 way.

22 MR. ALBERT: And I can't speak to the overall  
23 1,000 megawatts that he referenced. It doesn't surprise  
24 me, the number doesn't surprise me based on how I see APS  
25 and the capability that we have.

1 MR. DAVIS: But either way, that transmission can  
2 access a block of renewables in that area that's really  
3 important for Arizona. Thank you.

4 CHMN. MAYES: Thank you.

5 MR. AMIRALI: Good afternoon. Is it working now?  
6 I was about to start screaming.

7 Good afternoon, Chairman Mayes and Commissioner  
8 Newman. Thank you very much for organizing this forum.  
9 It has been extremely informative.

10 MS. ORMOND: Sir, who are you?

11 MR. AMIRALI: Oh, I'm sorry. Ali Amirali with  
12 LS Power. We develop generation as well as transmission  
13 projects, both, in different states in the west. In fact,  
14 we are developing a generation project in Arizona. And we  
15 are also the developers of a transmission line from Idaho  
16 all of the way to the border of California, the SWIP line,  
17 as several of you must have already known.

18 I just have a couple or three comments regarding  
19 some of the things that I heard here. And since I will  
20 address a few topics, I may be jumping around, so please  
21 forgive me for that. Plus, as an engineer, we lack  
22 organization, so that's my excuse.

23 CHMN. MAYES: I thought it was the lawyers that  
24 were disorganized, not the engineers, but it's good to  
25 know.



1 MR. AMIRALI: As long as the shoe fits.

2 CHMN. MAYES: Exactly.

3 MR. AMIRALI: We heard a lot of things today, you  
4 know, about what are the barriers towards construction of  
5 the transmission facilities. A couple of them that were  
6 thrown out were cost allocation and transmission requiring  
7 more time to develop than generation.

8 And they're all valid, but I would like to point  
9 out that one of my favorites -- before I go further, one  
10 of my favorite statements was made by Einstein. He said,  
11 you can't solve the problems of tomorrow using the same  
12 kind of mentality that was employed when you created them.

13 So if you look at the same structure that we have  
14 today, we are not going to address the issues that we face  
15 today here. In the renewable world, it's not the same.  
16 When we were doing integrated resource planning, all the  
17 information was known. Everything was known, we knew what  
18 the load was going to be, at least we had a projection,  
19 and we were approaching that. Right now, the whole world  
20 is changing around us. We are truly into the resources --  
21 we are truly looking at regional resources and satisfying  
22 regional requirements.

23 Now, as far as the cost allocation issue about  
24 there's definitely going to be one state is building  
25 transmission to deliver renewables to another state, there

1 could be issues associated with subsidization of cost by  
2 ratepayers of one state versus another. However, these  
3 are not issues that cannot be fixed, and I'll just throw  
4 out a couple of examples of how they can be fixed.

5           First of all, WAPA in the Desert Southwest does  
6 project financing. That is a structure that is in place  
7 today in Arizona where appropriate costs can be  
8 transferred to the customer that are utilizing the  
9 particular facilities. That's just one example. It's not  
10 an ideal fix, but it's available. The states in the  
11 Midwest are addressing that issue today where South Dakota  
12 wind is being transferred from -- wind from South Dakota  
13 and Minnesota is being transferred to Chicago.

14           The key is, is that if you keep using that cost  
15 allocation or addressing the cost allocation issue as a  
16 barrier, what we are going to face is what Commissioner  
17 Mayes initially pointed out, that the feds are going to  
18 come back and tell us how we are going to fix it. So  
19 either we resolve our issues, or somebody else is going to  
20 come in and tell us how to resolve our issues. I would  
21 rather get and solve these problems ourselves where we can  
22 come to a more amicable solution rather than one that is  
23 imposed upon us.

24           The gentleman before from TransCanada mentioned  
25 about merchant transmission. Merchant transmission is an

1 option. Another option is third-party transmission, and I  
2 characterize that as a little bit different than merchant  
3 transmission. And that is, instead of -- merchant  
4 transmission is based purely upon the allocation or for  
5 procurement like certain tenant, anchor tenant  
6 relationship.

7           Whereas, third-party transmission could be a  
8 different structure where a third party comes in and takes  
9 the development risk away from the utilities. And in  
10 return, once the project is developed, will get to roll it  
11 into rates. Now what you have done is you have just  
12 managed the risk that way. It is not like they have to  
13 have an allocation from customers. They just have to  
14 have -- somebody else has to come in and fork out the  
15 money up front.

16           So those are some of the issues that I wanted to  
17 bring out. Thank you very much for this opportunity, and  
18 we would love to continue to participate in forums like  
19 that.

20           COM. NEWMAN: Madam Chair.

21           Just in response, while you still have the mic,  
22 those are some very good ideas. Actually, I was talking  
23 to Alan Stephens, my policy analyst, about your last point  
24 upstairs.

25           I mean, you're talking about a total entity, a

1 very well-capitalized person who would build the  
2 transmission in hope of, first of all, you know, resolving  
3 climate change issues, number one. Number two, but also  
4 in hope of making profit down at the end line, because  
5 there will be so many solar installations built in  
6 Arizona, wind installations built in the Rockies, that  
7 sort of model.

8           So has that been done? I mean, that's the kind  
9 of thing that I guess has been tried in Texas, I guess,  
10 with some of the wind projects. You're talking about  
11 individuals like that, or would you like to respond? And  
12 who are the entities out there? Who are the sugar-daddies  
13 of the transmission world?

14           MR. AMIRALI: Far be it from me to characterize  
15 any of these guys as sugar-daddies, sir.

16           COM. NEWMAN: I can do it because I'm elected,  
17 and they can't impeach me for four years.

18           MR. AMIRALI: Sir, there are plenty of entities.  
19 In fact, like you mentioned the Texas process. That's a  
20 process that was organized by the state. That was  
21 organized and mandated by the state. That's an excellent  
22 forum where proposals were put forth by different  
23 participants, both the IOU, investor-owned utilities, and  
24 the transmission owners, as well as third parties, to  
25 provide access to different renewable zones.

1 Texas had a little advantage because it was known  
2 where the resources are. Right now, there is, of course,  
3 we have been discussing the chicken-and-egg issue. You  
4 know, how do you build transmission, and can we build it  
5 and hope that the people will connect to it? I don't  
6 think that's a model that is -- that may or may not work  
7 in certain situations. Different states have made it  
8 work. California is making it work, kind of, sort of.

9 The other model that is available is the  
10 California model where, of course, the project gets  
11 approved by CAL-ISO and then gets to get rolled in. But  
12 so the advantage of a -- like, first of all, we build  
13 transmission, and we will build it for a structure like  
14 such where we will come out and fork out the up-front  
15 development cost. We take the risk, and you don't recover  
16 the cost until the project goes into production. That's  
17 the model that is in place in California.

18 So it's a matter of if there is a risk issue, who  
19 takes the risk? Do you want to take the risk of  
20 permitting all of these lines and a chance that they'll  
21 never get built and then the cost goes to the ratepayers,  
22 or you want to have somebody else come in and take the  
23 risk, put out the development money, and then if the  
24 project gets developed, they recover the cost.

25 COM. NEWMAN: So is that your Einstein-ian

1 solution that you were talking about? Was that the model  
2 that you come to in your analysis? And I'm sure you have  
3 thought about this a lot.

4 MR. AMIRALI: That is just one of the models.  
5 It's not the model. It is just one of them.

6 I just wanted to point out, sir, there is not  
7 just -- the building of transmission based on central  
8 planning is not the only model. You know, we are looking  
9 at needs models, different models that satisfy different  
10 needs. As long as we are open to them, a solution --  
11 there are solutions available. If Arizona wants third  
12 parties to put out solutions, we'll be more than happy to  
13 bring some solutions to the table.

14 COM. NEWMAN: Well, I do look forward to your  
15 participation. You can write an e-mail to me about some  
16 of your ideas. But that's exactly, precisely the thought  
17 that I was talking to my policy analyst about. There are  
18 folks that are working with the federal government hoping  
19 that the federal government will come in and sort of  
20 assist in building these lines. Perhaps with the private  
21 sector involved it can be done.

22 It's very hard for the solar entrepreneurs  
23 without PPAs to do it. The IOUs are a little reticent to  
24 do it because we're in a cash-strapped world as we speak.  
25 And so it does call for some out-of-the-box thinking, but

1 I would recommend that you send some of your thoughts to  
2 the Commission, and I thank you for thinking out of the  
3 box.

4 MR. AMIRALI: I look forward to it, sir. Thank  
5 you.

6 MR. ALBERT: Can I make a comment real quick?  
7 Brad Albert for APS again.

8 I just to make sure that we're all clear on the  
9 models out there. I still haven't seen sort of that  
10 sugar-daddy that's willing to -- we've seen a lot of  
11 developers, probably TransCanada is a good example of it,  
12 or LS Power, that are willing to go somewhere down the  
13 road in terms of up-front investment from their  
14 shareholders of the initial up-front development costs,  
15 the studies, maybe even some right-of-way acquisition and  
16 the environmental permitting process.

17 But I haven't seen anyone out there that's  
18 willing to actually construct those major transmission  
19 projects out of their own pocket without having some sort  
20 of back-end assurance of cost recovery, whether it's a  
21 socialization through the CAL-ISO funding, the Tehachapi  
22 model that we were talking about earlier, or the type of  
23 process that's being proposed in the Reid or Bingham  
24 legislation in terms of interconnection-wide cost  
25 allocation. I haven't seen anyone that's willing to

1 actually build the stuff out of their own pocket.

2 COM. NEWMAN: Madam Chair.

3 If I could just ask you, in terms of the stimulus  
4 money that is there for transmission infrastructure that  
5 has been proposed in ARRA, how much money is that  
6 nationally?

7 MR. ALBERT: No. I'm familiar with the --

8 COM. NEWMAN: Or am I mixing terms here?

9 MR. ALBERT: The Western Area Power  
10 Administration, which is really the one that is sort of  
11 most relevant to our region here --

12 COM. NEWMAN: Yeah. And how much money is --

13 MR. ALBERT: \$3.25 billion of funding.

14 MS. ORMOND: Loans.

15 COM. NEWMAN: Loans, not --

16 MR. ALBERT: Yeah. But recognize that -- I  
17 forget the number. Is it 15 states that they serve?

18 MALE VOICE: 15.

19 MR. ALBERT: I mean, their service territory that  
20 they cover is vast.

21 COM. NEWMAN: So someone is going to -- that goes  
22 to the risk of averse -- some of the risk issues that the  
23 gentleman from TEP was talking about -- I was upstairs  
24 trying to listen in -- and stranded costs. Issues like  
25 that are still out there, and so that just goes to the



1 whole capitalization and risk structure.

2           So there's \$8 million in loans. So what is  
3 before us is creating some kind of system that  
4 cooperatively many parties will come together, because  
5 they see Arizona as being solar rich, many parties coming  
6 together for these loans. It's a huge risk in our  
7 capitalist system. Government is not going to do it. But  
8 it's going to have to be borne by many different folks and  
9 maybe supported by some sort of bonding as well.

10           You know, I'm reminded of, you know, the way the  
11 government built the freeway system is it wasn't by cost  
12 allocation or loans. They just built it. And I know that  
13 in Arizona I should be careful about what I say about the  
14 power of government, but you're talking about building a  
15 new superhighway, a new smart grid, but there really is no  
16 funding mechanism in place. Everything I have heard today  
17 to make that happen, the risk is still on ratepayers and  
18 companies, and so this model needs to be tweaked in some  
19 way.

20           When I have talked to people in Washington who  
21 say that we need to build this whole new structure and  
22 they're very excited about it and we need to have this  
23 smart grid, but nobody is just talking about loans that  
24 companies take out and people are going to have to pay  
25 back. I'm thinking to myself about this, but it's

1 interesting. And you're right, without the sugar-daddy  
2 model, you know, we're hurting, and I understand it a  
3 little bit more.

4 But is there anything that the companies can add?  
5 I mean, is there any way to do this cooperatively? The  
6 Commission says we need to have three lines. Like the  
7 gentleman in the back suggested that we have some -- make  
8 some decision about having three lines to build this  
9 industry because it's in the best interests of Arizona,  
10 and we have to make sure that the ratepayer doesn't get  
11 stuck ultimately with the bill.

12 How do we build that? Anybody in the room want  
13 to take up that question?

14 MR. DAVIS: Alan Davis again from TransCanada.

15 I think we're all trying to solve the same  
16 problem, and that is how do we break the chicken and egg  
17 with transmission and generation and get it built.

18 We're taking a different approach. We're taking  
19 a commercially driven model. We have an anchor shipper  
20 for half of our capacity. We're pure merchant risk. We  
21 don't have any ratepayers, so it's all a commercial driven  
22 model.

23 We're going to go to an open season pretty  
24 shortly, and we'll see if this type of model has  
25 commercial legs. If it does, then it will largely be

1 private sector financed and the wind developers and  
2 TransCanada will pick up that tab. There isn't a  
3 sugar-daddy out there. It's all about managing the risk  
4 and who is willing to commit at what time? But it will  
5 take the stage set of commercial commitments to take a  
6 very deliberate approach to getting this stuff built.

7 Now, we come at it from the way natural gas  
8 pipelines get built. That's what TransCanada largely  
9 does. This is a gas pipeline model. It's a producer  
10 driven model. Okay. That's one way that we're trying to  
11 see if we can solve this chicken and egg.

12 And that's why I say, these are the types of  
13 options that are really important to keep on the table. I  
14 think the gentleman earlier said there isn't a perfect  
15 solution. There are a host of options out there. You  
16 just need to keep the options open. But we think a  
17 private sector, commercially driven model. And we'll know  
18 within a few months if this is going to work. If we have  
19 the commercial support, we'll go. And if we don't, we'll  
20 fold our tent.

21 COM. NEWMAN: Who back there in the solar  
22 industry wants to speak up for the solar industry? Or are  
23 you guys going to keep quiet and say that somehow the IOUs  
24 with the Commission is going to have to figure out some  
25 way to get this line built?

1           Is there anybody who is so committed to the solar  
2 industry out there that they will help to commercialize  
3 with the IOUs, or am I seeing silence back there?

4           And I think I see -- not only today, many people  
5 I talk to I see silence. I understand your problems. You  
6 don't have the capitalization to do that, I guess; is that  
7 right? Does anyone want to say anything?

8           MS. ORMOND: Commissioner, if I can weigh in on  
9 this. Having watched how this has developed is that we're  
10 entering a new world. I mean, a wind developer has not  
11 typically had to pay for transmission. A solar developer  
12 has not had to pay for large amounts of transmission  
13 because they've sited near existing transmission.

14           Now, if we're going to build new transmission,  
15 we're entering a new world. Am I, as a private developer,  
16 going to take that risk and enter into an open season  
17 agreement? There was a line in Colorado, Wyoming to  
18 Colorado, the intertie there. It was the first open  
19 season that I knew of, and the answer was a resounding  
20 yes. The wind companies came forth and said I will put,  
21 you know, this much money out to buy this much capacity on  
22 your line.

23           So I think we're starting to see that, and Alan's  
24 project is one of those. When they go out for open  
25 season, in a couple of months we'll know whether the

1 industry, both solar and wind, is willing to step up and  
2 put money out there to build new transmission.

3 So we had Mr. Begay has been waiting to make a  
4 comment.

5 MR. BEGAY: Good afternoon. My name is Steve  
6 Begay, the general manager for Diné Power Authority,  
7 Navajo. I wanted to give you an update on the Navajo  
8 transmission project and make reference to the Desert Rock  
9 Energy Project and talk about the segments of the  
10 transmission line that we're working on.

11 First of all, the Arizona Corporation Commission  
12 did give the Navajo transmission line, the non-reservation  
13 portion, what we call Segment 3, a 10-year certificate  
14 from 2000 to 2010. So I think soon we'll be asking for an  
15 extension.

16 But to draw some comparisons, I wanted to talk a  
17 little bit about the transmission line. It's a three-  
18 segment line. The eastern terminus is at the Shiprock  
19 substation. The line will run approximately 189 miles to  
20 a new substation that will tie into the line coming down  
21 from Navajo, the 500kV line, the line that ties to  
22 Moenkopi. All of the other lines, they pass by Moenkopi.

23 There's a Segment 2 from Moenkopi -- from Red  
24 Mesa east to Moenkopi that we identify as Segment 2.  
25 Segment 3 runs from Moenkopi substation to Marketplace,

1 and it's a little over 213 miles. The line has been path  
2 rated about 1,500 to 1,600, depending on the market use.  
3 So we have available -- new available transmission  
4 capacity there that we intend to build, and it's all for  
5 any generation.

6 We worked on the Paragon power project 20 years  
7 ago, and we worked on the transmission line. We got the  
8 right-of-way from the Navajo Nation and the CEC from  
9 Arizona Corporation Commission that completes, in a sense,  
10 the right-of-way for the entire line. Since we had the  
11 right-of-way, we went back to looking at generation.

12 We've identified between 200 to maybe 800  
13 megawatts of solar potential in the Gray Mountain area  
14 near Leupp -- or near Cameron. Some solar potential in  
15 Page, some wind potential in the Ojito, Black Mesa area,  
16 maybe in the northern Chuskas for wind, and the Paragon  
17 Ranch in New Mexico, potential for solar.

18 And there's been recent inquiries from outside  
19 companies to build a whole line because of the stimulus  
20 act, and also new projects where -- there's a proposed  
21 Santa Fe project, I think, that the group here will hear  
22 about that from the people here. And that's a line, a  
23 DC line proposed from Clovis to Marketplace using  
24 Segment 3. Since Segment 1 is planned for development for  
25 any project, the Desert Rock project is the largest

1 project that we have using Navajo coal, Navajo coal,  
2 Navajo water, land, and the human labor available.

3 Just to give you an example of what might be  
4 available for renewables, the Desert Rock project is 1,500  
5 megawatts, two 750 ultra supercritical units with the  
6 latest emission systems and technology. Now, Unit 1,  
7 100 megawatts we intend to keep on that with the Navajo  
8 Tribal Utility Authority. The difference between the  
9 Navajo Power Authority and NTUA is NTUA is a distribution  
10 retail utility, whereas DPA is a large-scale bulk power  
11 transmission and generation enterprise.

12 So if we look at Unit 1 and keep 100 megawatts  
13 there, that leaves 300 megawatts for using the existing  
14 transmission capacity that is available that I'm aware of.  
15 It might be gone by the time we build it, but assuming in  
16 this example there's available 300 megawatts.

17 That would leave 350 megawatts to go on NTP-1.  
18 But since it's a 1,500 megawatt line, you'll have -- and  
19 we'll need about -- Desert Rock except will use some of  
20 its own power to run itself. So we'll have need for 1,370  
21 megawatts from the Desert Rock plant to put on the line.  
22 So if we use 350 on NTP-1, that leaves us 1,020,  
23 approximately. And if we build Unit 2, that's 750.  
24 There's no more real capacity available. So you need the  
25 1,020, 750 of that, and leaves approximately 270 megawatts

1 for renewables at least, because the line might be path  
2 rated higher than 1,500. So there's at least 270  
3 available for renewables.

4 So we've looked at Gray Mountain, Ojito, Black  
5 Mesa, and eastern New Mexico, a new plant that they're  
6 looking at. But New Mexico isn't really interested in the  
7 project that I'm referring to. They're interested in  
8 Segment 3. They want to run a line from Clovis to  
9 Albuquerque along I-40 into the Navajo tie into Moenkopi,  
10 and then use Segment 3, maybe the entire Segment 3, which  
11 will be path rated 1,500 megawatts.

12 So I wanted to just give you a quick update on  
13 the use of the line that we're going to build and how the  
14 coal plant, it is a modern plant. It's not 1800  
15 technology. It's 2009 technology, and it's German  
16 technology, which I think is more advanced than the  
17 American technology that I'm aware of. Maybe there's  
18 others that are more advanced.

19 As far as the wind, there's the Gray Mountain  
20 site, the Shonto/Black Mesa area for wind. There's the  
21 Page for solar, Paragon for solar in eastern New Mexico.  
22 And the Clovis hub, as I understand, will be renewables  
23 from the Southwest Power Pool and ERCOT. They're trying  
24 to run some lines there so that they can cross the seam  
25 there and then shoot power on a DC line all the way to



1 Marketplace. It's just a concept that I have been  
2 introduced to.

3           So that's the status of the wind and the solar.  
4 There's also proposals to use PV and fuel cells, fuel  
5 cells mainly to use existing fluid gas from existing  
6 plants, or the Desert Rock plant if it doesn't come about  
7 until then, or at least the technology is mature by that  
8 time, where the Desert Rock fluid gas will be put into  
9 that fuel cell, along with some liquid gas. The  
10 byproducts would be water and concentrated CO2 and  
11 electricity because of the chemical process. There's no  
12 thermal process. So you get additional megawatts, and so  
13 if we get that, then we might be able to use the line for  
14 the fuel cell power as well.

15           I just wanted to give you a quick overview on  
16 that. Thank you.

17           COM. NEWMAN: Madam Chair, I just want to thank  
18 Mr. Begay for his testimony. And I was actually wondering  
19 how things were up on the res, and I thank you for the  
20 report.

21           I had a wonderful visit last week from members of  
22 your telecommunications commission who are taking  
23 advantage of -- or want to take advantage of stimulus  
24 money for broadband connections on the reservation. In  
25 fact, they were looking at trying to access as much as

1 \$100 million from the administration for that, and I  
2 support that project and will help you do that. That  
3 really could do many things for job growth and just  
4 quality of life on the reservation. And I'm very glad to  
5 see that the tribe is also taking advantage of some of the  
6 natural wind and solar capabilities on your vast,  
7 beautiful lands. Thank you.

8 MR. BEGAY: And a data line would involve a new  
9 commercial license. What we have is for O&M for the time  
10 being. When we get there, we'll apply for a commercial  
11 license.

12 COM. NEWMAN: Yeah, I know that you'll have to be  
13 working with the Commission. I just wanted to tell you  
14 that I support the tribe in trying to access some of the  
15 money for broadband as well. But thank you so much.

16 MR. BEGAY: Thank you.

17 CHMN. MAYES: Mr. Begay, could I ask you a couple  
18 of quick questions?

19 I thought I heard you say that New Mexico is no  
20 longer interested. Did you say they're not interested in  
21 the Desert Rock plant output, but rather they want to use  
22 your line? And if that's so, they don't want your coal  
23 output, but they want to use your line for their wind, I  
24 take it?

25 MR. BEGAY: Well, I think they want some power,

1 but I think the power is already spoken for. APS did an  
2 RFP for up to 900 megawatts for a five-year period from  
3 2012-2016 time frame, and then SRP did an RFP for up to  
4 600 megawatts for the same time frame. So that's 1,500  
5 megawatts more than Desert Rock's output, so there's none  
6 available for New Mexico, but they want to use the NTP.

7 CHMN. MAYES: For wind.

8 MR. BEGAY: For their renewables, eastern New  
9 Mexico power.

10 CHMN. MAYES: But you have also received some  
11 inquiries from merchant builders who are also  
12 interested --

13 MR. BEGAY: Yes.

14 CHMN. MAYES: -- from Texas.

15 MR. BEGAY: That want to build from Shiprock  
16 substation to Marketplace. We've got inquiries. They  
17 want to build that whole line.

18 CHMN. MAYES: Interesting. Thank you for being  
19 here.

20 MR. SMITH: Madam Chairman, Commissioner, Jerry  
21 Smith of K.R. Saline & Associates.

22 What a day packed full of information. I'm  
23 trying to recall in my career if there's a day like this  
24 that has been more informative than this, and I'm not sure  
25 I can think of one at the moment. But the more I think

1 about it, after 29 years in the utility business and nine  
2 years at the Commission and two years in the consulting  
3 field supporting renewable developers and regional  
4 planning efforts, I would say that maybe what this is is  
5 déjà vu all over again. It's not unlike what was  
6 occurring 10 years ago with combined cycle plant  
7 development at the Palo Verde Hub.

8           And I disagree somewhat with the comment earlier  
9 about this is a whole new experience we're having. No,  
10 generation is generation. Whether it's renewable or some  
11 other technology, it still takes the generation to be  
12 transmitted to the consumer for there to be a business  
13 and for the public's interest to be served.

14           But there's been a lot of talk about the  
15 chicken-and-the-egg issue, PPAs versus the interconnection  
16 queue process, about generation timing versus transmission  
17 timing. And I'm going to suggest those all have some  
18 issues and challenges, but I want to use the chicken  
19 analogy in a different way. And my analogy is: Why did  
20 the chicken cross the road? Because there was a rooster  
21 on the other side. There would be no egg but for the  
22 rooster and the chicken. And I think what you're looking  
23 for in this proceeding is a marriage between the rooster  
24 and chicken that enables you to deliver the egg, which we  
25 call renewable energy.

1           Here are a couple of challenges that I see still  
2 need some attention. There are those that would suggest  
3 that -- well, first of all, we're better in Arizona for  
4 this to occur. Our planning processes are in place, we  
5 have 10-year transmission plans that have been well  
6 thought out, well-studied, and well-vetted before the  
7 Commission.

8           There is one missing piece in the planning arena,  
9 and that is we do not have the generation planning to go  
10 along with the transmission planning that helps us  
11 complete that picture. But that's starting to unfold  
12 slowly but surely as we see what APS has been doing  
13 through their generation process.

14           But, unfortunately, what we have is those that  
15 would suggest that they should be able to simply  
16 interconnect generation and deliver the load without  
17 worrying about transmission. This is the same issue we  
18 had 10 years ago at the Palo Verde Hub with gas-fired  
19 units.

20           And I would suggest to you, I also disagree  
21 somewhat with Amanda's comment about our interconnection  
22 queues are working just fine, because, frankly, if you're  
23 a developer and trying to go through those interconnection  
24 queues, it is a real struggle to get through those  
25 interconnection queues and come out the other side with a

1 project.

2 But what I think is broken in that process is the  
3 interconnection queue is really an operational paradigm.  
4 It's not a planning paradigm. They are predominantly  
5 seeking energy-only connections. There are some that are  
6 seeking network connections who are willing to step  
7 forward and pay for the transmission associated with their  
8 interconnection.

9 And regarding who pays, I would suggest those  
10 that are getting PPAs and are seeking network type of  
11 services offer you a small group of sugar-daddies that are  
12 willing to help fund the transmission investment in  
13 Arizona to deliver to Arizona. Now, that doesn't solve  
14 the transmission delivery export to other states. That  
15 still needs a broader context.

16 But what is also broken about the interconnection  
17 queue process is you have those interconnection queue  
18 processes are run individually by the individual  
19 utilities. If you think back to the slide that was shown  
20 earlier this morning of all of the interconnection queues  
21 and all of the interconnections that are currently active  
22 in Arizona, it begs two questions.

23 The first is: Why are we spinning wheels talking  
24 about a resource development potential when we've got  
25 10,000 megawatts in the interconnection queue? That

1 offers an energy future that moves us many years down the  
2 road towards a renewable technology.

3           The second question it poses is: How, if you're  
4 wanting to look for transmission, three projects in the  
5 state that best accomplish the purpose, where is there  
6 planning going on looking at the aggregate effects of  
7 these interconnection queues? It doesn't exist today.

8           And I think we have set up an opportunity for  
9 that in the SWAT, our RTTF process, is some potential  
10 studies that look at the aggregate impacts of these  
11 renewable projects. Some real planning work looking for  
12 transmission projects that meet the broader interest of  
13 how do we serve the renewable needs of the industry as a  
14 whole, not just for the state.

15           And I think my encouragement would be to  
16 developers. Please engage in that process, because that  
17 is where you can assure that the transmission that's  
18 required for your project can gain some support and become  
19 a reality.

20           The last thing I would like to offer is regarding  
21 willingness to pay. When you have parties that are  
22 seeking interconnections that are in the process of  
23 signing a PPA that are not being successful getting  
24 through the interconnection process and puts their PPA  
25 agreement in jeopardy from a performance standpoint, it

1 does not speak well for where we are with our  
2 interconnection queue process, and particularly when some  
3 of those same interconnectors are willing to step forward  
4 and pay for transmission investment and facilities that  
5 are already planned and already sited in the state. And  
6 to me, that is something that we need to find a solution  
7 for.

8 CHMN. MAYES: Jerry, I appreciate your comments.  
9 I mean, they are so well-taken given your vast knowledge  
10 in this area, and it's good to have you here today and  
11 your thoughts.

12 And I just really want to bore in on this issue,  
13 because I think you have sort of, in several ways, hit the  
14 nail on the head.

15 To your last point, one of the suggestions that I  
16 put out there when I wrote my amendment to create this  
17 process was that when the utilities go about proposing and  
18 developing plans and mechanisms -- for funding mechanisms  
19 and for their top three renewable transmission projects,  
20 that maybe one of those plans or mechanisms could be some  
21 kind of open season process or period-of-interest process.  
22 I don't know what to call it exactly -- where you separate  
23 the wheat from the chaff.

24 And the projects that you're talking about would  
25 come forward, and then the utilities would know who they



1 are and, you know, we could start to see where the  
2 transmission needs to be built. I mean, that's just an  
3 idea. Are there other ideas out there for doing what I  
4 think you're talking about, which is breaking through the  
5 utility bureaucracy, which I understand -- I totally agree  
6 with you, the interconnection process -- well, I don't  
7 know if I disagree with Amanda. It's not as broken as it  
8 is in California.

9 MR. SMITH: I agree with that.

10 CHMN. MAYES: I think it's less broken in  
11 Arizona, but it still seems to frustrate so many project  
12 developers.

13 So in your mind, what is a way through this?

14 MR. SMITH: I think the utilities have their  
15 hands full with the number of interconnections that  
16 they're trying to process.

17 CHMN. MAYES: Right.

18 MR. SMITH: And by no means am I suggesting  
19 they're doing a poor job of dealing with that large mass  
20 of interconnection requests that they have.

21 But what I'm suggesting is procedurally we need  
22 to find a way to bridge the interconnection process and  
23 the planning process so that we have, as Mr. Kondziolka  
24 suggested, that we have some idea of transmission projects  
25 from a planning context that meets the longer term

1 objectives. That you can start going through a siting  
2 process, get corridors set up, without waiting for the  
3 interconnection queue process to conclude. And so it puts  
4 the planning back in front of the process rather than as a  
5 party is trying to interconnect.

6 CHMN. MAYES: But how would you do that? How  
7 would the Commission or the utilities do that? What is  
8 the mechanism or the process to do what you're talking  
9 about?

10 MR. CHARTERS: I have one.

11 CHMN. MAYES: Because I know you talked about  
12 SWAT, but that's sort of -- it's a great group, but it's  
13 sort of up here and it's disconnected from the Commission,  
14 and I don't know when they're going to -- I just --

15 MR. SMITH: Let me give some context to this  
16 response.

17 When I came to the Commission in 1999, there was  
18 no subregional planning going on. And here we are 10  
19 years later suggesting that one of the states with the  
20 best subregional processes is deficient because it hasn't  
21 crossed the t and dotted the i for renewable transmission.  
22 I think it's doing it. It's not where we would like it to  
23 be. I believe in what SWAT is trying to do.

24 What I am discouraged by is the delays that we  
25 are seeing in the technical study effort because we're

1 waiting to define the zones, waiting to better define the  
2 interconnection potential, when we have all of these  
3 projects out there in a queue that are begging for an  
4 interconnection opportunity.

5 CHMN. MAYES: Okay. Let me drill down on that,  
6 because I have heard that, too. And you're talking about  
7 the power flow studies associated with building various  
8 transmission lines, and I've been frustrated by that, too.  
9 Because sort of I get different answers from utilities  
10 about when those power flow studies will be completed.

11 And what you're saying is that the utilities are  
12 holding off -- I don't know if it's the utilities or SWAT,  
13 but they're holding off on doing the power flow studies  
14 until the zone -- until this process that we have going on  
15 right now is completed, or not?

16 MR. SMITH: I would not say they are holding off.  
17 I am saying these are efforts that are connected. You  
18 cannot plan the transmission without knowing the  
19 generation you're trying to plan it for.

20 CHMN. MAYES: Okay.

21 MR. SMITH: What we do have, fortunately, that is  
22 a plus on the short-term, at least, is planned facilities  
23 that are shovel ready that have been through the siting  
24 process, that I think you likely will see surface at the  
25 end of your process in October as candidates for your

1 three high-priority transmission projects. Those can  
2 jump-start the near term requirements.

3 But what I'm suggesting is the planning process  
4 needs to be engaged in looking beyond that. And so I  
5 don't think the SWAT forum is negligent in terms of where  
6 they are in that planning process. They're trying to  
7 refine the data that they need to analyze and model and  
8 study. But what is missing in that process is the  
9 developers need to come to the table in the planning  
10 environment, not just the interconnection queue process --

11 CHMN. MAYES: Okay. Interesting.

12 MR. SMITH: -- to make that effective. Because  
13 if we wait until we have them in the interconnection  
14 queue, it is too late.

15 CHMN. MAYES: Okay.

16 MS. ORMOND: Madam Chairman, I don't disagree,  
17 but I think that there's a difficulty here. Because I  
18 come in for my interconnection request, and I typically  
19 don't have my purchased power agreement yet, is my  
20 understanding.

21 And so to ask developers to come forward in a  
22 planning process, I'm going to come forward and, say, yep,  
23 I'm the real deal, build your transmission around me. But  
24 what assurance do you all have that my project will  
25 actually come to fruition if I don't have that purchased

1 power agreement.

2           So I understand the concept. I just don't know  
3 how that works in practice. It would be great if the  
4 utilities could look at the interconnection queues and  
5 separate out the real from the not-real projects, the ones  
6 that will get financing, the ones that will get PPAs. I  
7 don't know how you do that. Maybe there's a process out  
8 there. I don't know.

9           MR. SMITH: I'll be glad to respond to that,  
10 because I think we have examples already in place. The  
11 Abengoa project is an example of that. They've had a PPA  
12 in process before it completed its interconnection queue.  
13 It got through the siting process before it finally got  
14 the financing. So is that a real project? I guess it's  
15 yet to be determined.

16           But I think we have another model in terms of the  
17 Zephyr and Chinook projects that are getting approval on  
18 the financial end of things in terms of the rate recovery  
19 component, and now are trying to seek -- trying to seek an  
20 open season for all takers, and then they're going to go  
21 through and do their due diligence in terms of  
22 interconnection studies, et cetera.

23           So I think we have a variety of models in place  
24 to draw from that are different than our traditional way  
25 of doing business.

1 CHMN. MAYES: Right. And I think the point about  
2 Solana is it was a little different than the traditional  
3 way of doing business. There was a certain level -- and  
4 while our attorneys hate it when I say this -- but there  
5 was a certain level of preapproval that occurred there of  
6 the project.

7 And I don't -- you know, they came in for a  
8 special look from the Commission. The Commission granted  
9 that approval, and so -- and I don't know how much of  
10 the -- well, I think, you know, ultimately it probably is  
11 going to be important for the financing of that project.  
12 I don't know how much it impacted the transmission, but we  
13 approved the transmission, obviously, so that's an  
14 interesting example.

15 MR. SMITH: I would like to offer one concluding  
16 other observation, and it deals with the financing issue.

17 You are aware that the Arizona utilities have  
18 filed their statements of interest with Western Area Power  
19 Administration for projects that they feel would be --  
20 they would like to offer as eligible for stimulus funding.

21 What I would like to ask is those utilities  
22 currently have interconnection queues that are trying to  
23 study projects that were based upon those projects being  
24 in service. Now, if these projects are selected for the  
25 stimulus funding, does that queue become invalid and now

1 there's a new queue with Western for those projects?

2 I don't know the answer of how you deal with the  
3 interconnection queue issue for multiple entities that are  
4 seeking jointly to have a project become eligible for the  
5 stimulus funding, but it poses a new dilemma from an  
6 interconnection queue perspective. I would like to  
7 believe that there is a good solution to this issue, but I  
8 wanted to raise it as a cautionary flag that it's  
9 something that we need to be looking at, because it could  
10 cause some delays if it goes the way I just portrayed it.  
11 It could cause some delays for those developers that may  
12 be willing to take advantage of some of the transmission  
13 projects that are among your three favorite in October.

14 CHMN. MAYES: Okay. Thank you for that thought.  
15 Yes.

16 MR. BELVAL: Ron Belval from TEP. I just wanted  
17 to respond to that. I also am not disagreeing with what  
18 you say, Jerry, but since you brought up the issue of not  
19 business as usual, I would like to explain that comment,  
20 is that traditionally what all of the utilities have been  
21 doing is planning based on what they know. And what we've  
22 known for the last 20 years are where the generation is  
23 going to be sited, and the transmission system has grown  
24 up around that pattern. So it's dictated by where the  
25 generation is or the resources or where the load is.

1           What is different about this is that you have set  
2 up a basically a new paradigm in telling us that you want  
3 to see resources developed in Arizona, and you would like  
4 to see the output of those resources delivered to  
5 customers in Arizona. And we're trying to deal with that,  
6 and just noting that there is going to be a different  
7 pattern to the transmission system. And today we had an  
8 opportunity to share with you the concerns and policy  
9 issues, and I think this is going in the right direction.

10           I just wanted to say that that is the reason why  
11 this is not business as unusual. We have an existing  
12 system based on a historical generation load pattern, and  
13 now we're talking about renewable resources that in many  
14 cases are very large projects in locations materially  
15 different from where the existing power plants are, and  
16 that's going to require a different system.

17           CHMN. MAYES: Yeah, and point well-taken, but I  
18 would add, you know, I think this Commission is interested  
19 in a market-based and this being driven by the market as  
20 well. We want economical renewable energy resources in  
21 addition to -- I mean, we just don't want any old  
22 renewable energy resource. We want to do this in a smart  
23 and efficient way.

24           And I think that's why I'm interested in a sort  
25 of cluster-based approach to this and the best way we



1 possibly can, taking, you know, Amanda's group's  
2 information about, you know, the environmental inputs,  
3 taking Tom's group's information about how to finance  
4 this, but then developing some process that tells the  
5 utilities, okay, here is where the real deal is. This is  
6 where the real projects are starting to coalesce, and  
7 doing it the best way we can based on that.

8 I mean, you know, there probably will -- you  
9 know, there will be some winners and losers. There will  
10 be some viable projects that are -- you know, that are  
11 further away from the projects that ultimately get built  
12 first, but I'm looking for a market-based approach at  
13 least to some degree to this. And I think we can do that.  
14 I think we're starting to see that.

15 And the question -- for instance, BLM is in the  
16 audience. BLM has more than, as I understand it, 40  
17 applications in front of them for permits. Some of those  
18 are going to be the same as the interconnection queues,  
19 but the question is which of those are the viable  
20 projects, you know, and then which lines we build based on  
21 that information.

22 COM. NEWMAN: Madam Chairman, yeah. I too agree  
23 that this is one of the most extraordinary meetings that I  
24 have ever been in, and I'm a relative newcomer.

25 But one thing that I find interesting, some of

1 the developers are building right near the transmission,  
2 the existing transmission lines. They're not -- because  
3 they -- whether they're smart or stupid or whatever, that  
4 that seems to be a pretty smart move because they don't  
5 have to deal with wherever the new lines are going to be.

6           There are some other people that were in the  
7 room, or there are some projects that are being presented  
8 right now to APS, TEP, and others. So they are pretty  
9 smart developers, if you ask me, if they're well-  
10 capitalized and have a good product, because they are --  
11 they should be getting the first bet, although they are  
12 tinkering with the price with IOUs who still think that  
13 this whole process is too expensive and I don't want to go  
14 in there. But that's some of the companies that the IOUs  
15 should be really dealing with. You could actually put  
16 them on line right now if you were really serious about  
17 meeting renewable energy standards.

18           Number two, I always brought this up, and I know  
19 I have talked to experts about this. What about  
20 hibernization? You have hibernization from the context of  
21 you have plants in place right now with transmission  
22 lines, Springerville, other places. There's no reason  
23 why, you know, TEP couldn't put more, working with the  
24 private industry, you know, solar and wind in areas that  
25 were close, if they were all possible, to present plants.

1 That's the term of art, hibernization. I mean, that's  
2 planning.

3 And then what I see is a new problem, and I  
4 totally agree with you that this is a new paradigm. I  
5 think it's a new paradigm. It is a new paradigm in the  
6 sense that the IOUs are very scared about the price.  
7 These projects cost billions of dollars. It's going to  
8 come, and we should be scared about the price as  
9 Corporation Commissioners looking out for the consumers,  
10 and I totally understand your situation.

11 But we have no idea what projects they're looking  
12 at. It's a private process, a private monopoly process  
13 that the Commission is not really a part of. So they get  
14 to say, yay or nay on what projects. We have to trust  
15 their expertise. Usually their expertise is pretty right  
16 on, but who knows why they're saying yes to that project.  
17 It could be because it's the lowest cost. And it may not  
18 be the best project, it's just the lowest cost for the  
19 customers. Who knows. But we as regulators have no idea  
20 about what is going on. It's still in the IOU's hands, if  
21 you hear what I'm saying.

22 So if we have created this new paradigm, we're  
23 trying to -- you know, with your process we're trying to  
24 help this along, but we only have one major project okayed  
25 so far, and I know that there are 100 out there that are

1 looking to be okayed.

2 So, you know, how can we help that process along?

3 Do we change the rules of the game saying, no, we would  
4 like to know at the Commission what all of these projects  
5 are and have a special committee to do rankings that work  
6 with our IOUs? I don't know. That may call for a new  
7 regulatory paradigm.

8 Because right now, the queue is stopped. Partly  
9 because of the economy, but partly because of the  
10 difficulty of dealing with this new situation. I agree  
11 with you it's still generation, but it is a totally  
12 different way of doing it. There are now sweet spots that  
13 we want to farm, if you will, sweet spots of Arizona that  
14 we want to farm, and you all know where they are. We may  
15 not end up setting up renewable energy zones, but that's a  
16 part of this process. And we more or less know where they  
17 are, because the science says it's 7.5 and above. It's  
18 sort of near transmission lines. We'll get to know.  
19 We'll help you build more transmission lines if we need to  
20 do that.

21 But I want to know from this process, too -- I'm  
22 rambling a little bit -- you know, what can we do at the  
23 Commission to help this? Because I'm frustrated just  
24 seeing one project that was sort of specially treated, for  
25 lack of a better word, you know, go through.

1 I just met some gentlemen from another Spanish  
2 competitor today. You know, it seemed like they have a  
3 good project. It may not be a great project, but they  
4 didn't even know about this general discussion that we're  
5 having today.

6 So what should we do as a state to help this  
7 process along? Maybe should we be changing some of our  
8 regulatory rules to help this process along. Maybe we  
9 should be doing decoupling to help this process along. I  
10 don't know.

11 MS. ORMOND: Madam Chairman, Commissioner, I  
12 think your finance committee, when it reports back to you,  
13 I think you're going to have some of those suggestions;  
14 here is different ways that you can go forward. So,  
15 obviously, we have a lot of work to do.

16 The Chairman just told me that we are beyond our  
17 designated time, but we have two folks that are going to  
18 make really fast comments.

19 MR. KONDZIOŁKA: This is Robert Kondziolka, Salt  
20 River Project. In the essence of time, I think I will not  
21 comment on all of the items I was going to comment on, but  
22 I do want to maybe put a positive end to Mr. Smith's  
23 comment.

24 When the utilities in Arizona submitted its joint  
25 statement of interest to Western, it was with the specific

1 intent of facilitating renewable energy development and  
2 delivery, and it was not our intent to introduce something  
3 that, if we were successful, which would delay things.

4 Certainly there are, you know, maybe some issues  
5 that are out there that we have to deal with, but speaking  
6 for SRP, it would not be our intent to move people to a  
7 new queue or the back of a queue as a result of being  
8 successful and working with Western.

9 I would remind everyone here, if you recall  
10 Mr. Smith mentioned back in the '99, 2000, 2001 time frame  
11 when FERC had not created all of the interconnection  
12 queues, and we had many of these same type of issues.  
13 That is what we ended up coming up with Hassayampa, to  
14 make certain that all of those generators could be  
15 accommodated. The transmission wasn't there, but if  
16 everyone recalls -- and I won't give everyone the history  
17 now -- but we have more than doubled the expansion  
18 capability out of that area.

19 I think that the utilities and the folks in this  
20 room have the knowledge and they have the will to make  
21 this work. I think there's certainly different ideas on  
22 how to get there, but there have been some great ideas  
23 expressed today. And I think that we will ultimately  
24 bring back in October solutions which address this very  
25 issue. So with that, I'll yield to Mr. Wray.

1 MR. WRAY: I'm also reminded of Yogi Berra.  
2 Jerry quoted him a bit ago. And what comes to mind right  
3 now at the end of this long day time, and it has been  
4 remarkable, is that we may not know where we're going, but  
5 we're making great time.

6 My inquiry to the Commission in the closing,  
7 waning moments this evening is simple. There are very  
8 important policy considerations that we have not talked  
9 about today. We've talked around them, we've talked about  
10 the symptoms, and we haven't talked about the cause, in my  
11 view, sufficiently.

12 And rather than spend the night here, what I  
13 would pose to the dais is the following. Is there a  
14 mechanism under the open docket that exists now, which is  
15 an information docket, that's associated with the fifth  
16 BTA, essentially, for a certain chairman of a certain  
17 subcommittee to pose rhetorical inquiries that perhaps you  
18 as Commissioners might find an occasion to file a response  
19 to, non-case specific?

20 I'll give you an example just to whet your  
21 appetite.

22 CHMN. MAYES: This is getting weird, Tom, but  
23 okay. Go ahead.

24 MR. WRAY: It's an out-of-body conversation we're  
25 having.

1 CHMN. MAYES: Yeah.

2 MR. WRAY: If you're serious, one of the ways  
3 that you can address from a policy standpoint the siting  
4 side, the siting statutes are creatures of the  
5 legislature. However, you have constitutional authority  
6 in your balancing powers when you're looking at  
7 ratification, denial, or modification of a CEC that's been  
8 approved by the Siting Committee.

9 Now, you are not supposed to create a record in  
10 this process. You are supposed to rely on the record of  
11 the siting committee. However, you do have the ability  
12 to, when balancing a recommendation for a CEC for a  
13 particular renewable transmission project line, for  
14 example, that because the nature of the need is such that  
15 it rises beyond the ordinary course that you may have seen  
16 in the past, you might accord that project a higher need,  
17 and, therefore, find that the CEC is in the public  
18 interest and that the unmitigated environmental damage  
19 brought about by the proposed action is necessary. That  
20 is a policy level matter that you can do under your  
21 current authority with the constitutional balancing  
22 powers.

23 So what this comes down to, this is just an  
24 example. Would you find it a policy matter to accord a  
25 higher level of need to a renewable transmission line than



1 you would a transmission line proposed in the ordinary  
2 course?

3 CHMN. MAYES: And so your question to us is can  
4 you pose questions to the docket that the Commission would  
5 then take up in some form?

6 MR. WRAY: In some form, if you find an occasion  
7 to do so.

8 CHMN. MAYES: Okay. I don't know if we can. I  
9 think that you can pose questions. You can do whatever  
10 you want in that docket.

11 MR. WRAY: I don't want -- Madam Chairman, I  
12 don't want it to be a futile experience.

13 CHMN. MAYES: And I don't want it to be a futile  
14 experience either. Certainly, you can get individual  
15 responses from individual Commissioners. And then I think  
16 what we would do is take it up at a Staff meeting, discuss  
17 it with our attorneys, and see whether we could respond.

18 I mean, because, you know, certainly -- and I'm  
19 just thinking off the top of my head here, which may be  
20 dangerous, but it may be something the Commission, in  
21 response to that question -- and I think that you're going  
22 to have to be careful about posing too many questions and  
23 becoming too burdensome for the Commission to deal with --  
24 but a response to that question could come in the form of  
25 a policy statement, maybe, but that's -- you know, from

1 the Commission. But that's something that the Commission  
2 has to talk about, and I don't know, you know, what our  
3 attorneys are going to say about that.

4 MR. WRAY: I can't predict the outcome of that  
5 discussion with your counsel, but I suspect this can be  
6 done in such a way that it does not violate ex parte  
7 issues.

8 CHMN. MAYES: Okay.

9 MR. WRAY: Altogether.

10 CHMN. MAYES: Again, we are in a workshop  
11 context.

12 MR. WRAY: That's true, and this is an open  
13 public docket.

14 COM. NEWMAN: Right. And if I can just respond.  
15 The lawyers have a little bit -- you know, you're asking  
16 for an extraordinary solution given the extraordinary  
17 issue that we face. The lawyers are going to be all  
18 over -- we have very, very studious counsel that is very  
19 careful with us about their advice, and they probably  
20 would give us pretty strong advice about toeing the line.  
21 And I'm just being open and honest about that.

22 And the other thing that came to my mind was that  
23 the environmental groups out there that are very concerned  
24 about wherever these lines go, you know, no matter, you  
25 know, no matter what the purpose, they want to be part of

1 a public process, and there is a statute and a public  
2 process.

3 So, I mean, I have to -- that's how I answer that  
4 question today as you pose it to me, but I do think that  
5 this process calls for different ways for the Commission  
6 to deal with the implementation of renewables, and that is  
7 something that we need to explore with counsel.

8 And we're only two of the five Commissioners up  
9 here who will have a lot of different answers to that.  
10 But I see from today's experience that I need to put my  
11 thinking cap on, and we need all of you to put your  
12 thinking cap on, on perhaps changing some of the  
13 procedures but not violating anyone's due process in the  
14 process.

15 MR. WRAY: Madam Chairman, Commissioner Newman,  
16 what I'm suggesting here is not without precedent, first  
17 of all, before this Commission. Secondly, as far as a  
18 finance committee is concerned, since we've spent most of  
19 the day today talking about how to find where to put these  
20 lines, an insufficient amount of time has been accorded to  
21 how we're going to pay for them.

22 COM. NEWMAN: We need another meeting.

23 MR. WRAY: And I'm not talking about third-party  
24 merchant financed lines that are project financed. I'm  
25 not talking about that. I'm talking about how you get

1 your jurisdictional utilities to be incentivized to build  
2 transmission for advancing renewables, which if enough of  
3 that is done, the unit cost of renewable generation will  
4 go down because more of it is developed. That inures  
5 directly to the benefit of your ratepayers.

6 COM. NEWMAN: Yeah. And I agree with you, and  
7 the way you put it was perfect. That is the issue.

8 CHMN. MAYES: Let me make a suggestion here, Tom.  
9 I agree with you. We had a great day today, but we didn't  
10 spend a lot of time on your committee's task, and I do  
11 think that perhaps another workshop of the Commission  
12 would be in order.

13 You guys have six months to complete the next  
14 step of this mission, and so certainly in the next month  
15 or two I think it would be appropriate, if the  
16 Commissioners agree, to come back and do another day of  
17 this. I think that would be great.

18 I mean, from my standpoint, you know, this is in  
19 the top two priorities of this Commission, and the other  
20 one is energy efficiency. So I say we continue to charge  
21 ahead and drive hard at this, and we probably ought to --

22 MS. ORMOND: Okay. I just wanted to make sure  
23 people were aware that the next ARRTIS meeting -- we have  
24 two meetings left before we will package our material and  
25 hand it off to the utilities. The utilities need several

1 months to be able to do the modeling that they need to be  
2 able to come forward with their three proposals. Our next  
3 meeting is April 30, and then we're followed by a May 14  
4 meeting. The finance committee is tentatively scheduled  
5 for June 1?

6 MR. WRAY: Very tentative. Yes, I do think that  
7 it's in the interest of the finance committee to reconvene  
8 the RTTF and decide on the scope of the investigation just  
9 as a check, and then we'll get started back up.

10 MS. ORMOND: Right. And it sounds like it does  
11 make sense to really dig into some of the financial  
12 issues, because we did have a number of things that we  
13 actually did not get to related to finance.

14 CHMN. MAYES: And in that sense maybe, Tom, you  
15 can divine the answers to some of your questions.

16 MS. ORMOND: We'll call that Tom's meeting.

17 MR. WRAY: I'm going to place them under the  
18 Rosetta Stone if you'll tell me where to find it.

19 MS. ORMOND: All right, folks. Thank you very,  
20 very much for hanging in and all of your attention. Thank  
21 you, Commissioners, Chairman.

22 (The Joint Workshop adjourned at 5:20 p.m.)

23

24

25

1 STATE OF ARIZONA )  
2 ) ss.  
3 COUNTY OF MARICOPA )

4

5 I, MICHELE E. BALMER, Certified Reporter  
6 No. 50489 for the State of Arizona, do hereby certify that  
7 the foregoing printed pages constitute a full, true and  
8 accurate transcript of the proceedings had in the  
9 foregoing matter, all done to the best of my skill and  
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11

12 WITNESS my hand this 3rd day of May, 2009.

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*Michele E. Balmer*  
MICHELE E. BALMER  
Certified Reporter  
Certificate No. 50489

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# **SIGN-IN SHEETS**

# Joint Workshop on Renewable Transmission Issues

Arizona Corporation Commission

Docket No. E-00000D-07-0376 & E-00000A-09-0066

Monday, April 20, 2009

9:30 AM

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	Name	Address	Phone	Company	Email
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